UDC HOUSING IN BINGHAMTON, NEW YORK BY THE ARCHITECTS COLLABORATIVE

INSIDE THE MIT DOME: WALTER NETSCH OF SOM RESTORES A LANDMARK INTERIOR

A NEW HOSPITAL AND AN EXPANSION BY EDWARD DURELL STONE

BUILDINGS AS LANDSCAPE, DESIGNED BY WILLIAM MORGAN

BUILDING TYPES STUDY: HOUSING BY THE URBAN DEVELOPMENT CORPORATION

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ARCHITECTURAL RECORD

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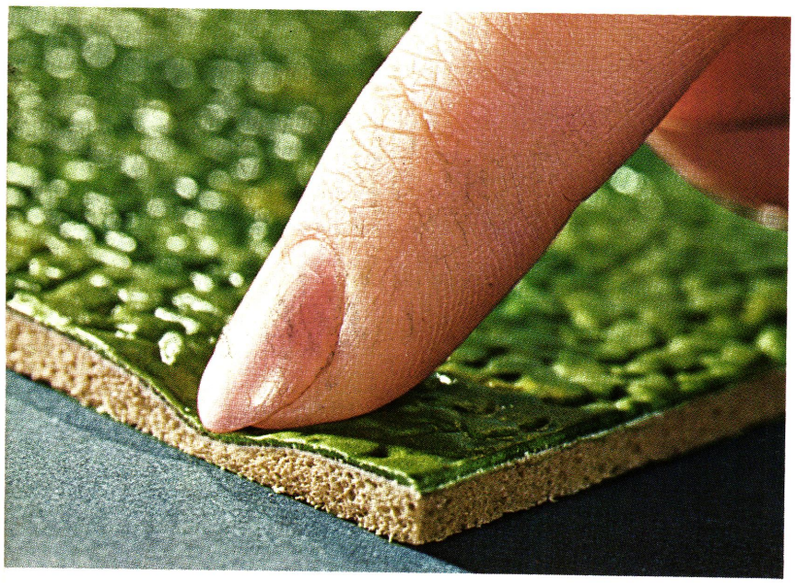

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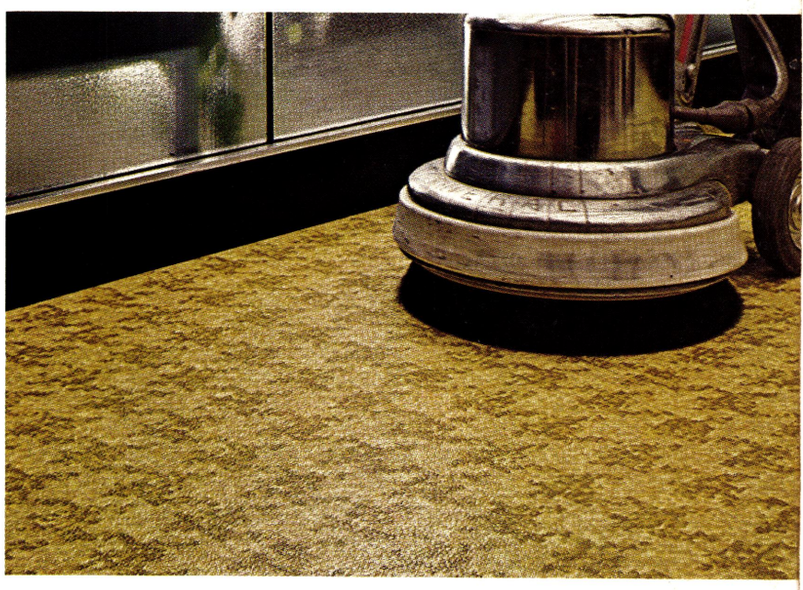

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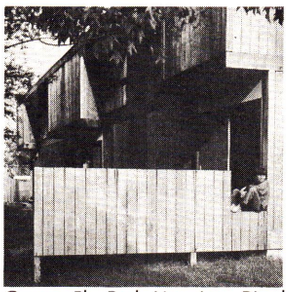

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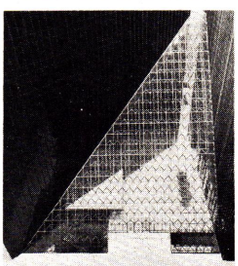

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The Community Hospital of the Monterey Peninsula at Carmel, California, has been such a success that a new three-level pavilion and doubly expanded main lobby were called for well in advance of predictions.

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145 Housing—The New York State Urban Development Corporation

The Urban Development Corporation has within four years become one of the most important sources of architectural commissions in New York State. It chooses architects from all over the country to design housing for low- and moderate-income people, and it chooses these architects on the basis of their ability to act creatively in the interests of UDC clients, not on the basis of the size of the firm or that firm's tradition of political work. The first round of housing undertaken by the UDC is now complete and this Building Types Study presents four of the best finished projects. The New York UDC could become a prototype for similar action by other states or by the nation, and architects need to be aware of its achievements, as well as some of the questions it is beginning to generate.

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Weathering Steel blends corporate headquarters into harmonious wooded setting

A wooded valley with a meandering stream is the setting for National Liberty Corporation's new headquarters building on a 92-acre tract near historic Valley Forge, Pennsylvania.

A prime consideration was to maintain and enhance the esthetic values of the site to present an attractive corporate image while creating an optimum working environment.

The architectural firm of Vincent G. Kling & Partners recommended a structural steel framing system, with exterior columns and spandrels fabricated from Bethlehem Mayari R Weathering Steel (ASTM 242, Type 1). Their choice blends the structure with its wooded setting as the bare steel weathers to a rich dark brown and develops a self-protecting, natural oxide coating.

Location and design of the structure fitted into a master plan for further development of the site. The initial construction phase provided a 4-story building encompassing 135,000 gross sq ft of office space to accommodate some 750 employees of the insurance firm. Executive, marketing, operations, and computer functions share the structure.

The result is a unified, functionally efficient building, strikingly adapted to its environment. Maximum growth flexibility is provided for without weakening the unity of the initial structure.

The building measures 360 by 92 ft. Its central bay is 52-ft wide, framed on either side by two 20-ft bays. The structure spans a small stream crossing the site, and connects the two major building segments with an area which may be used for either circulation corridors or office space.

Bethlehem provided approximately 700 tons of A36 grade structural steel for the building framework, as well as 400 tons of Weathering Steel for the exterior columns, spandrels, grating, and window frames. Steel framing is versatile, economical, and adaptable. It provides large column-free office areas so highly prized by building tenants. Want more information on steel-framing? Put in a call to our sales engineer at the Bethlehem sales office nearest you. Bethlehem Steel Corporation, Bethlehem, PA 18016.

BETHLEHEM STEEL

Weathering Steel gratings at each floor level, between the exterior walls and the sun screen, facilitate washing the bronze-tinted insulating glass.

The lobby is located at ground level in the central bay of the headquarters building, midway between the first and second floors, providing easy access to front offices.

Owner: National Liberty Corporation; architect: Vincent G. Kling & Partners, partner-in-charge, Jonathan Naylor, AIA; project architect: Helmut Krohnemann; structural engineer: Allabach & Rennis, Inc.; fabricator/erector: Belmont Industries, Inc., and Keystone Wire and Iron Company; general contractor: L. F. Driscoll Company. Exterior columns, spandrels, and window frames are Bethlehem Mayari R Weathering Steel (ASTM A242, Type 1) which will weather to a rich dark brown, further blending the structure with its wooded surroundings.

The central section of National Liberty Corporation's new headquarters bridges a valley and a small stream crossing the site. An artificial lake further enhances the landscaping while an existing adjacent wooded area is maintained intact.

Great ideas in inner space with Westinghouse ASD Group

Plan to cut future renovation costs with flexible new offices that grow and change with the company.

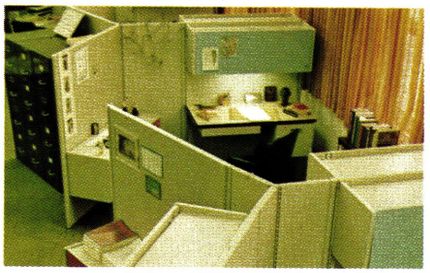
Florida Power Corporation, St. Petersburg, Fla.

Florida Power Corporation wanted a system of efficient work stations that would blend in beautifully with their brand-new corporate headquarters. One major requirement—the system would have to be just as functional tomorrow as it is today. They chose Westinghouse ASD Group. Florida Power Corporation's offices will adapt easily and inexpensively to meet the company's changing needs.

Not only can these new offices be altered to accommodate new personnel and new job functions, they can be easily changed to reflect the newest ideas in office comfort, convenience, and esthetics.

Best of all, all the office renovations that are sure to come can be accomplished without alteration of lighting and air conditioning and without expensive work disruptions.

Put more space into less space.



The College of St. Rose, Albany, N.Y.

The Education Department of the College of St. Rose appeared to be losing the office-space race. Many instructors were faced with the prospect of either sharing space in a common "pool" of desks, or seeking accommodations elsewhere in the college. The cost of new construction was deemed prohibitive, and the only space available for renovation was one 45′ x 25′ community room.

With Westinghouse ASD Group, planners were able to create 15 offices—with an average of 75 square feet per office—and a feeling of spaciousness that far exceeds the actual space.

Thanks to Westinghouse ASD Group, the Education Department staff is working closely together, but with more privacy than ever before.

Create a new work environment that pleases all of the people all of the time.

Westinghouse Design Center, Pittsburgh, Pa.

The Westinghouse Design Center is a team of creative individuals who have definite ideas about how their offices should look and function. They're also quite a challenge for office planners.

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Whether you're considering new construction or a renovation, look into Westinghouse ASD Group. Your new office system could be the next great idea in inner space.

Complete information is available by contacting Westinghouse, Architectural Systems Department, 4300 36th Street, S.E., Grand Rapids, Michigan 49508.
Or by calling 616 949-1050.
You can be sure if it's Westinghouse.

Westinghouse ASD Group

For more data, circle 3 on inquiry card

Energy conservation: A potential disaster starts getting the attention it deserves

In January of this year, the RECORD published the results of a "Round Table on Energy Conservation through Higher Quality Building." It was—as far as we know or have found out since—the first major effort to bring together all of the various segments of the building industry in order to discuss the extent of our "energy crisis" and to see what could be done about it. That meeting —which to some at the time seemed premature, or at least much ado about a pretty specialized problem—now appears to have been a harbinger; and a pretty well-informed harbinger at that.

In our report, we argued that "There's an energy crisis right now in some parts of the country—and it's spreading." We pointed out (see newspapers around the country for current reference) that "Environmental concerns are making it harder to mine fuel and locate new generating plants to meet the needs of our growing economy." We argued that there are plenty of things that architects and engineers can do to conserve energy (so we don't need to generate as much), but that not much has been done because "there has been no incentive—no reason for most building owners to care." The reasoning was simple: Electricity has traditionally been cheap and abundant; and almost anything a designer can do to reduce energy conservation adds something to first cost—even if it does reduce operating costs. But the Round Table predicted that "the whole equation of higher quality building vs. lower operating costs could be changed drastically by changing conditions [like much higher power rates or government regulations]" and predicted that "the concept of lower operating costs and energy conservation through better materials and equipment might well gain strength if the concept of life-cycle costing gains strength—and it will."

Well, for the past few months, as we've entered the traditional "brown-out" time of the year, I've tried to keep special note of developments around the country in the energy conservation department. And I'm happy to report there are plenty of them:

At least two major industry producers are effectively promoting conservation

One is Owens-Corning Fiberglas. To my knowledge, Owens-Corning's effective display in its Fifth Avenue, New York exhibit space was the first (early last fall) public promotion of the need for energy conservation. Now it has developed an Energy Conservation Awards program, with which the company "hopes to stimulate new ways to conserve energy . . . [and] honor architects and engineers who do the best job of designing buildings and mechanical systems that conserve energy." In this program, all registered architects and professional engineers are invited to submit details of energy-conserving design in institutional, commercial, or industrial buildings. Winners will receive a Steuben crystal sculpture, awarded by a distinguished jury of architects and engineers.

Another producer involved is PPG Industries, through its PPG Industries Foundation. It sent a letter of invitation to ten leading schools of architecture, which reads in part: "While it is true that the architectural profession is genuinely concerned about the problem [of energy conservation], it is appropriate to ask if enough has been done in the education of tomorrow's architects to make the students aware of the new demands that will be placed upon the profession by the energy crisis.

"It is with this question in mind that the PPG Industries Foundation would like to approach your institution and a few other leading schools of architecture in the United States to invite your participation in a competition for a grant of $25,000. The question to be addressed can be answered simply: tell us what your school would do with such a grant to improve the education of your students in subjects relating to energy conservation as it affects construction and building operation."

Wisely, "a condition of participation is that a sister department, engineering, must be involved in the preparation of proposals from each institution." Submissions will be judged by an outside panel of architects and engineers; and while only one school will receive the grant of $25,000, each other submission will be awarded a nominal contribution of $1,000 to "cover costs incurred in the preparation of proposals."

Well, this kind of industry involvement, it seems to me, is corporate statesmanship of a very high order. One can hope that some truly fresh and creative thinking comes out of these two programs—and if so the reports will be published in RECORD as soon as possible.

The Office of Emergency Preparedness is talking not just supply but conservation

George Lincoln, the director of the President's Office of Emergency Preparedness—speaking to a Round Table on Energy jointly sponsored by the National Bureau of Standards and the General Services Administration—made a number of points which made it clear the Executive Branch is deeply concerned and involved. Said General Lincoln: "At the policy level, energy policy spans the areas of national security, foreign policy,

—Drawn for the RECORD by Alan Dunn

"I hear nostalgia is coming back—"

economic policy, environmental policy, and perhaps some others. . . . Just to illustrate the types of conflicts occurring, our domestic reserves and production of oil and gas are leveling off while demand is increasing. Higher fuel prices might stimulate greater exploration, development and production but such increases are counter to current economic stabilization concerns. We have abundant coal, our least noticed energy source, yet environmental standards limit the short-run utility of these coal reserves [as well these should.—Ed.] and inhibit the timely development of oil on the Alaskan North Slope and the Outer Continental Shelf [as well they should.—Ed.].

After vaguely scolding the environmentalists ("We must get the point across that the nation's energy problems are of at least the same magnitude as our environmental concerns"—which may or may not be true, and probably is not true), General Lincoln made what seems to me to be the key point: "From the standpoint of its effect, energy conservation is a factor in energy supply in the same category as more coal, more gas, more oil, and more nuclear power. From the standpoint of policy areas —national security, foreign policy, environmental objectives, and economic objectives—energy conservation gets a double plus. . . ." In short, if I may suggest a new slogan: "A megawatt saved is a megawatt that we don't need to build a new generating plant to generate. . . ."

The Producers' Council is presenting a series of 50 seminars on conservation

Beginning this month, the Producers' Council will offer—in 50 major cities across the country in a series of half-day seminars—"practical suggestions on how to reduce heating and cooling costs and conserve energy . . . through proper initial design, and through proper utilization and application of building products and equipment. . . . Considerable attention is devoted to 'first costs vs. life cycle costs' and the economic fallacy of the 'low first-cost syndrome.'" According to the Council, "The program format in each city will be a keynote address on the extent of the energy crisis, followed by five 15-minute sessions by technical staffs of key manufacturers illustrating energy-saving ideas in the selection and application of insulation, lighting, glass, heating and air conditioning, and utilities." Sponsors of this far-ranging program are American Public Power Association; American Gas Association; Amspec, Inc.; Apache Foam Products; Armstrong Cork; Barber-Colman; C-E Glass; Electric Energy Association; W. R. Grace and Co.; Grefco, Inc.; Johns-Manville; Libbey-Owens-Ford; Owens-Corning Fiberglas; PPG Industries; Silbrico Corp.; and Westinghouse. And three cheers for that kind of effort!

A lot of other studies and techniques are zeroing in on the problem

Item: New York architect Richard Stein has just been awarded the 1972 Brunner Award to continue his already-considerable investigations into energy conservation. His studies indicate that non-residential buildings now waste about 250 billion kilowatt hours per year—the total output, by his calculations, of about 40 large power plants.

Item: A. D. Little, Inc., of Cambridge, Massachusetts, has just been awarded a $197,400 contract by NASA to explore the feasibility of using large satellites at synchronous altitude to convert solar energy to electric power in space, then transmit the power via a microwave beam to earth stations for distribution.

Item: New York State's Public Service Commission has announced an investigation of New York City's harassed Con Edison that will go far beyond its usual concern over rates, or construction of new plants and transmission lines. This study will consider "regulating the present unbridled use of electricity, particularly for heating and air conditioning . . . and even consider possible regulations on the future use of electricity." The Commission is reportedly considering limiting the amount of power the utility will be permitted to sell for heating, or may limit the company to supplying power only to buildings which meet certain heat-loss standards.

Finally, the GSA is now into energy conservation in a very practical way

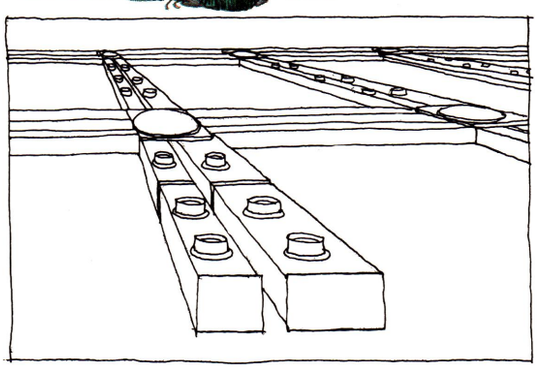
As the world's largest client for buildings, the GSA recognizes its considerable responsibility and influence in energy conservation. Acting Administrator Arthur Sampson, who attended the RECORD Round Table a year ago, held a similar meeting in May which attracted a large and influential group, largely but not entirely from government agencies. The report of this conference has just been released, and contains a host of ideas for engineering exploration which will be discussed in an early issue. But the news that intrigued me most was the announcement that GSA will use two Federal buildings already planned for construction and use by government agencies as "model buildings," which will incorporate a wide variety of architectural and engineering design concepts directed at reducing energy requirements.

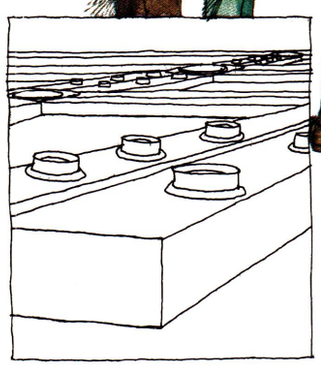
In short, in one short year energy conservation is a No. 1 priority

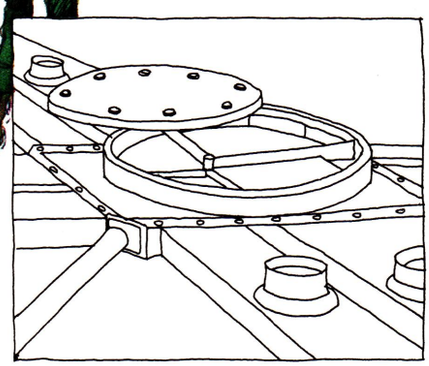
. . . and well it should be. The solution, it seems to me, to our energy crisis lies not in loosening of the newly-born environmental standards. That cop-out is widely suggested by all kinds of special interests, and should not be permitted unless and until we have first eliminated the profligate waste of power that marks every phase of American life—in our buildings, in transportation, in inefficient equipment of all kinds. And that's a battle that we have just begun to fight. Let's get on with it!

—Walter F. Wagner Jr.

FREE SPACE INSIDE.







What's the catch? No catch. Just tell the owner if he uses Walkerduct instead of a solid concrete floor, he can have some extra space in his building.

True, he can't rent it. But he certainly can use it. Like when tenants start adding phones or moving them. And what about all the new sophisticated equipment coming?

By running all the communications, power and signal requirements under the floor inside Walkerduct, the owner has nothing to worry about. The building is safer, more efficient and able to handle any future needs quickly, easily and neatly. Without tearing up the floors. Without spending a small fortune.

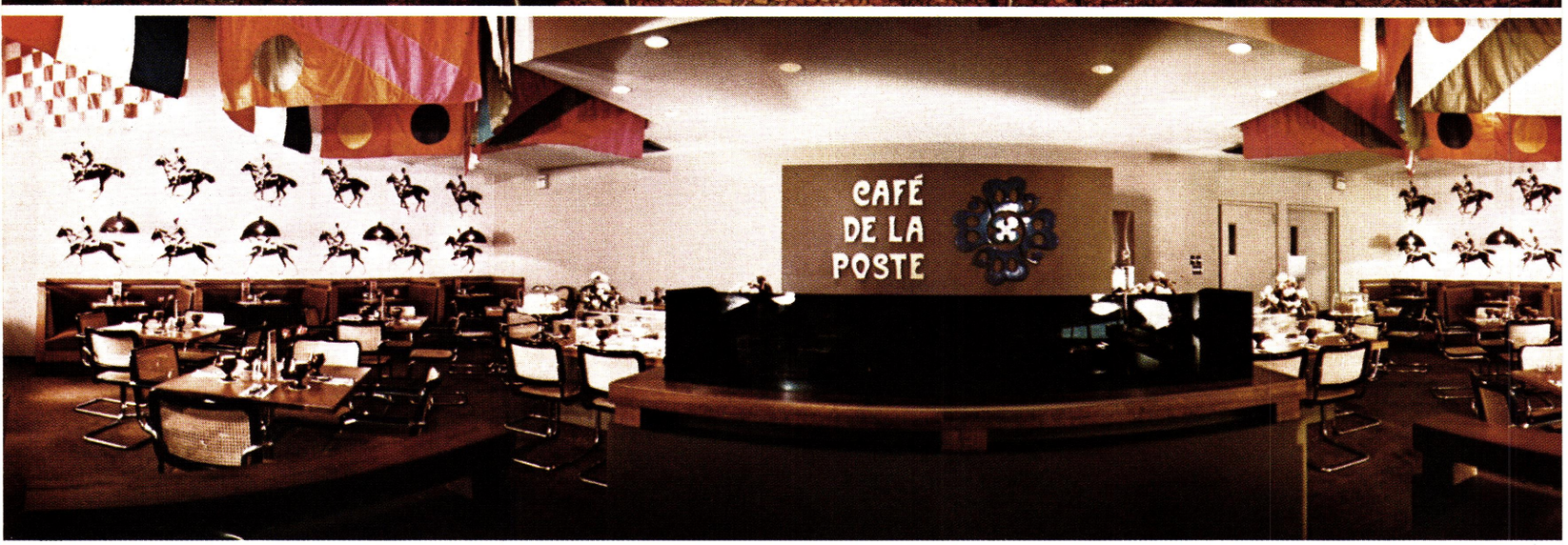
Ask your Walkerman for all the details. He'll gladly fill you in. Or write: Walkerduct, Parkersburg, West Virginia 26101.

In Canada: Walkerduct of Canada.

walkerduct® WALKER / PARKERSBURG

A textron DIVISION

For more data, circle 4 on inquiry card


CAFÉ
DE LA
POSTE

Lobby: Furnishings by both Selig and Thonet; decorative accessories by Raymor/Richards, Morgenthau and carpeting from Simmons Contract Division. **Dining Room:** Chairs and tables by Thonet. **Coffee Shop:** Chairs and tables by Thonet; lamp fixtures and accessories, Raymor/Richards, Morgenthau. **Guest Room:** Beautyrest® bedding and the carpeting by Simmons Contract Division; draperies and bedspreads by Bloomcraft; lamp fixtures and decorative accessories, Raymor/Richards, Morgenthau; case pieces and table by Thonet; chairs by Selig.

SIMMONS PUT IT ALL TOGETHER

The inviting new Sheraton Poste Inn, Cherry Hill, New Jersey.

Another beautiful example of how you can bring an entire design plan to life through Simmons—one source for all the furnishings you need for innkeeping, health care and educational institutions, as well as homes.

Let us show you the sweeping range and superb styling of Simmons products and help you coordinate selection and installation.

With all our resources at your command, you'll save time and effort, as well as broaden your design possibilities.

Let us help you bring it all together.

A call to Bob Costello, General Manager, Simmons Contract, at (312) 644-4060 will start things moving.

SIMMONS COMPANY Domestic Divisions and Affiliates: Living Room • Contract • Juvenile Products • Hausted • Thonet • Greeff • Bloomcraft • Katzenbach & Warren • Raymor/Richards, Morgenthau • Moreddi • Selig • Artisan House • American Acceptance • York-Hoover • Elgin Metal Casket □ International Operations: Simmons Limited, Canada • Simmons De Argentina, S.A.I.C. • Simmons Bedding Co., Pty. Ltd. and V.S. Wright & Sons, Pty. Ltd., Australia • Sleepeezee Limited and Warner & Sons Limited, England • Cie. Continentale Simmons, S.A., France • Cia. Italiana Simmons • Simmons Japan Limited • Compania Simmons, S.A. de C.V., Mexico • Simmons, Inc., Puerto Rico • Simmons de Venezuela C.A., Venezuela.

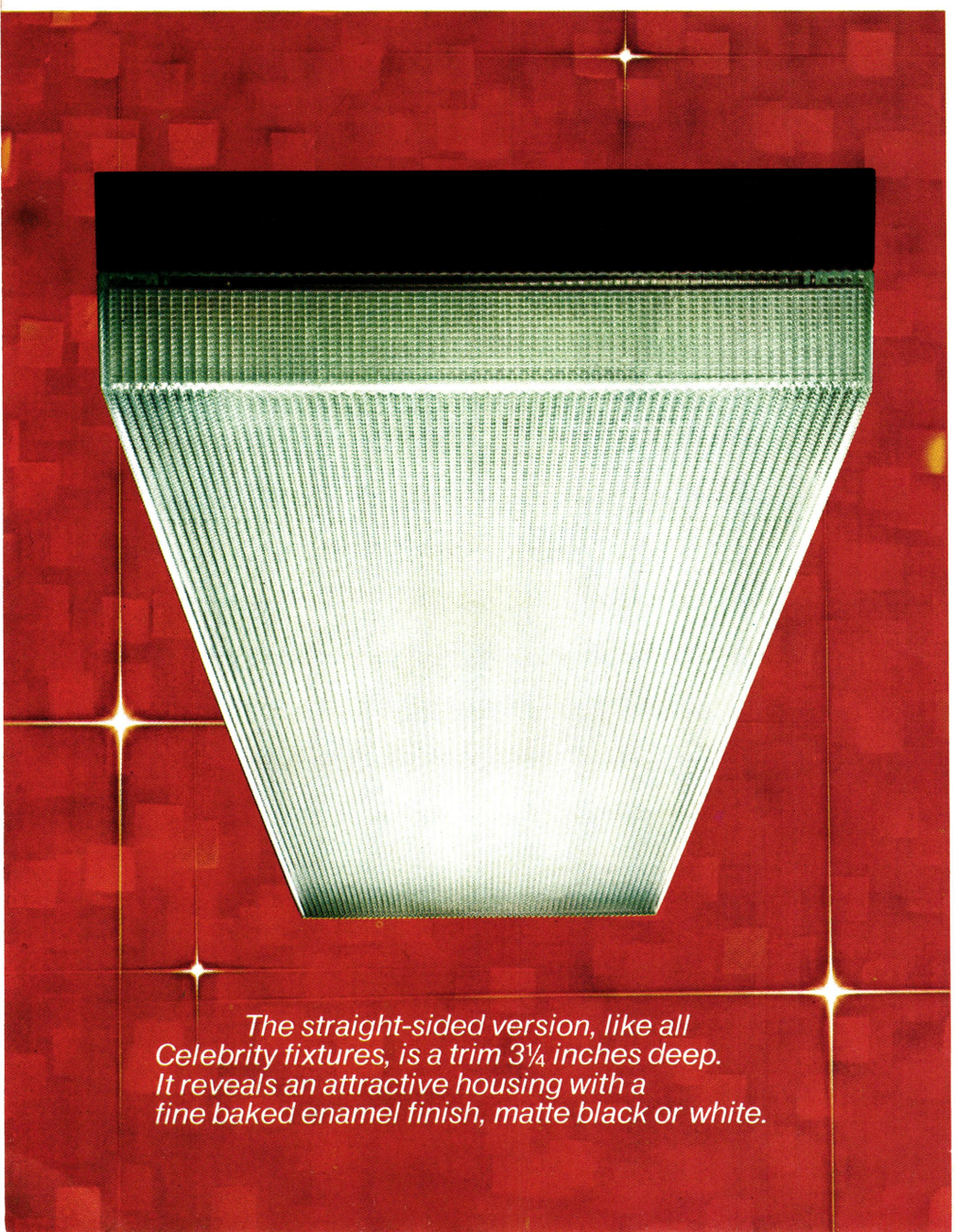
For more data, circle 5 on inquiry card

See things in a remarkably different light with Keene Sechrist's new Celebrity fixtures.

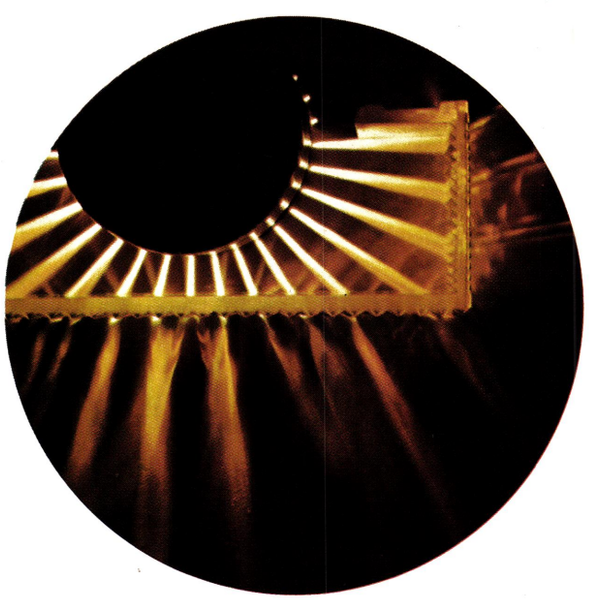
There's new excitement overhead! Sechrist's revolutionary Celebrity concept lets you cast light in an entirely different way—softly, uniformly, unobtrusively—creating a whole new environment of light in prestige locations.

The secret is an optically unique lens that took over two years to perfect. A one-piece injection-molded acrylic unit, it has rows of conical prisms that reflect and refract to virtually cancel out lamp image, transmitting light equally from all lens surfaces. The result is a controlled glow over the entire illuminated area—free of distracting bright-and-dark contrasts.

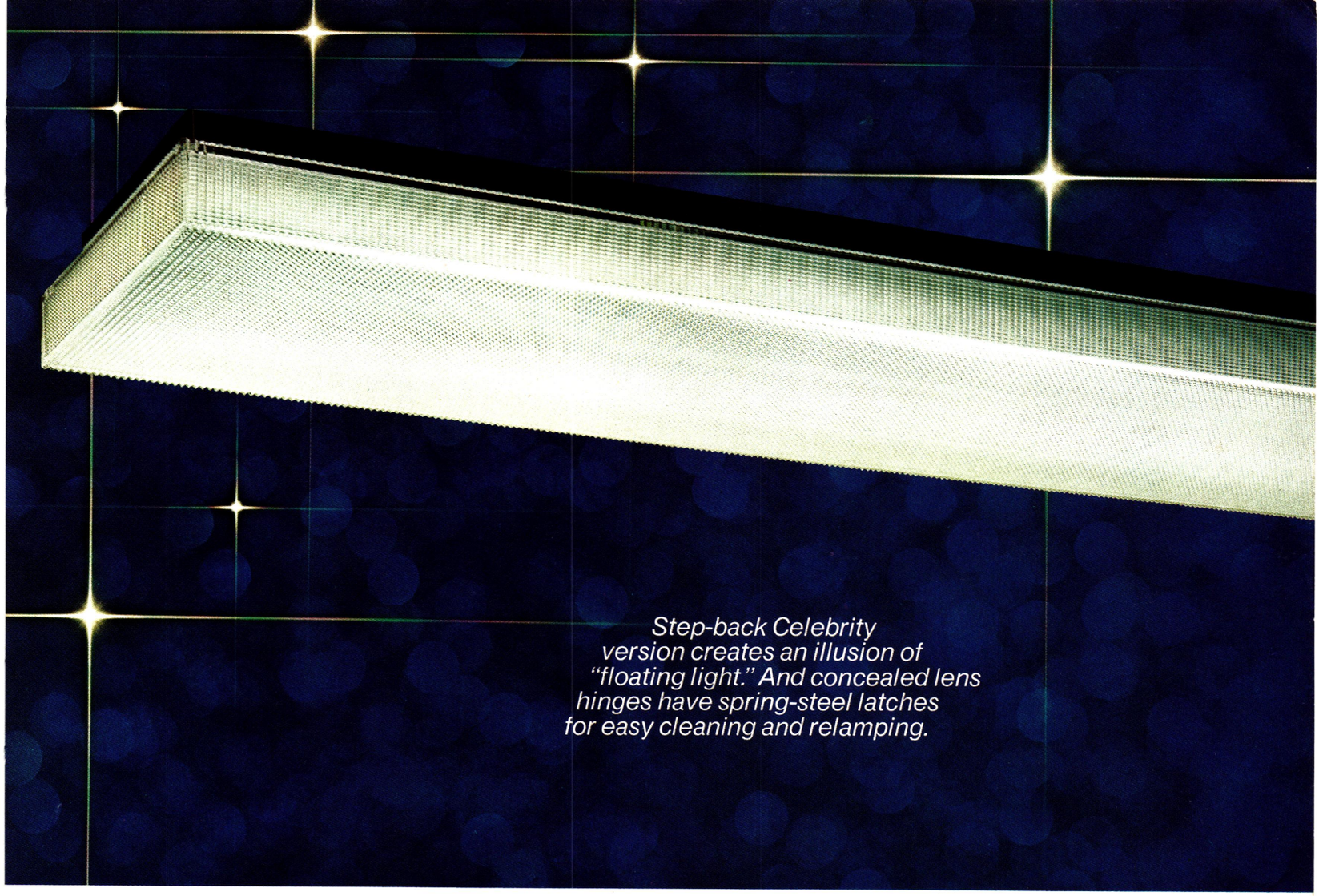
Three distinctively different Sechrist Celebrity fixtures are available to enhance



The straight-sided version, like all Celebrity fixtures, is a trim 3¼ inches deep. It reveals an attractive housing with a fine baked enamel finish, matte black or white.



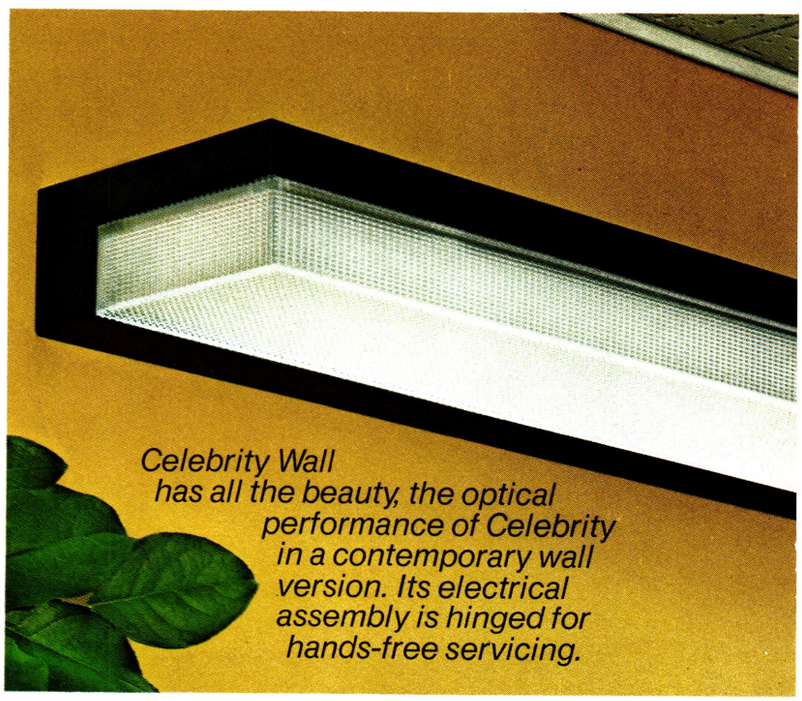
Rows of identical prisms mirror out brightness at critical viewing angles, transmit "controlled" illumination.



Step-back Celebrity version creates an illusion of "floating light." And concealed lens hinges have spring-steel latches for easy cleaning and relamping.

all your fine interiors. In the dramatic step-back model, the housing is recessed behind the edges of the lens, creating an illusion of "floating light"—a luminous rectangle floating in space. The straight-sided Celebrity reveals its fine quality housing, boldly framing the radiant light source. Celebrity Wall is a handsomely cantilevered wall-mounted version designed to illuminate corridors, washrooms, stairwells and reception areas as never before.

But you've got to experience Celebrity to believe it—and realize how it can put your interiors in an entirely new light. Ask your Sechrist agent for a demonstration. And for all the performance details, write Keene Corporation, Sechrist Lighting, 4990 Acoma Street, Denver, Colo. 80216. Phone (303) 534-0141.



Celebrity Wall has all the beauty, the optical performance of Celebrity in a contemporary wall version. Its electrical assembly is hinged for hands-free servicing.

KEENE
CORPORATION

SECHRIST LIGHTING

We've just begun to grow.

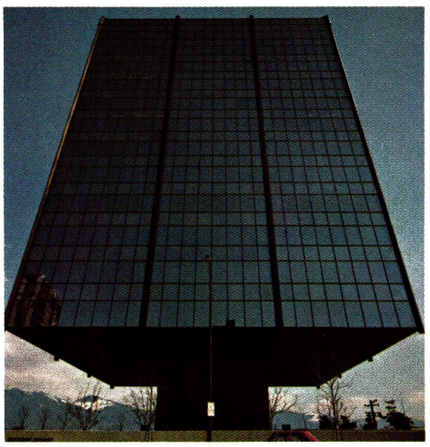
For more data, circle 6 on inquiry card

Positive thermal break

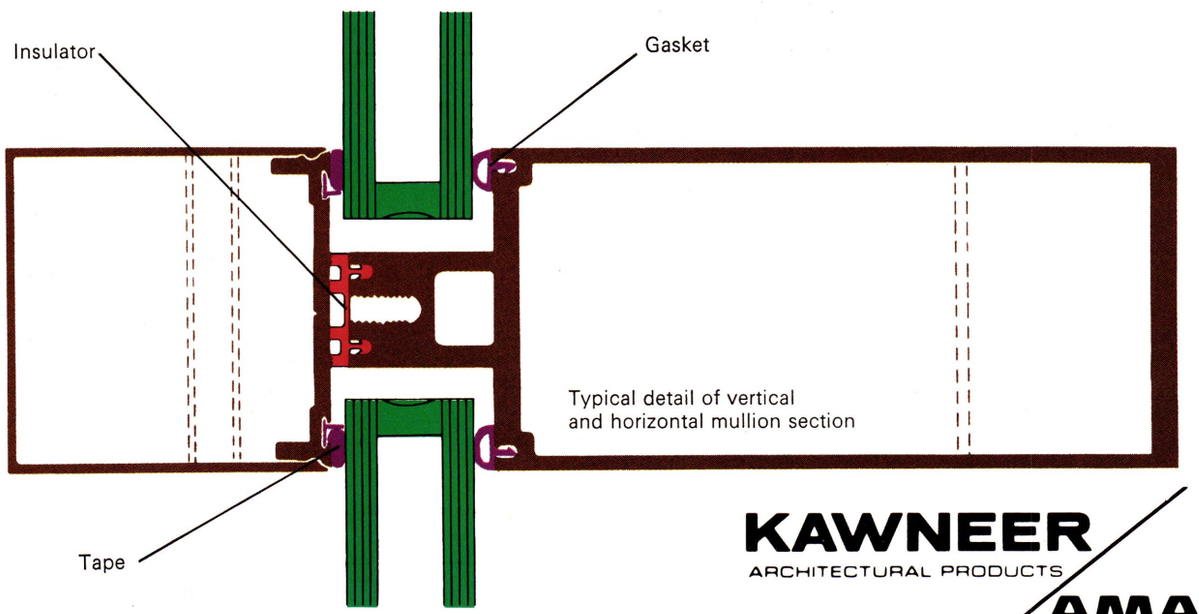
1600 Curtain Wall

a standard system with custom flexibility

A simple modification by Kawneer's design engineering department easily adapted the standard 1600 Curtain Wall System to an application where floors are anchored in place from the top down . . . with the bottom story 30 feet off the ground. □ Result for Vancouver's new Westcoast Transmission Building: a "custom" application within standard budget requirements. □ That's how easy it is to specify 1600 Curtain Wall . . . in "ordinary" or "extraordinary" situations. □ And there are important dividends: 1600's positive thermal break eliminates contact between inside and outside surfaces. As a result, heating and air conditioning costs are lowered and heat transfer (which contributes to interior condensation) is minimized. □ From the design standpoint, 1600's snap-on cover selection allows the architect to create strong verticals, shadow box effects or flush facings. All in optional Permanodic™ Finishes: No. 28 medium bronze, No. 40 dark bronze, or No. 29 black. □ In 1600 Curtain Wall—as in our complete line—you can depend on Kawneer to design out problems from the start . . . and meet the individual ones a particular project can bring. Attention to detail, that's the Kawneer concept.



Architects: Rhone & Iredale, Vancouver, British Columbia



KAWNEER
ARCHITECTURAL PRODUCTS

AMAX
ALUMINUM

For full information, see your Kawneer representative or contact Kawneer Product Information, 1105 N. Front St., Niles, Michigan 49120.

For more data, circle 7 on inquiry card

We gave the most beautiful building in Chicago the air.

The architects of Chicago's award-winning Lake Point Tower apartments needed a heating and air conditioning system that would allow them to keep the smooth, flowing design of their building.

General Electric custom designed our Zoneline™ heating-cooling unit to meet their needs.

They had their luxurious-looking building and solved some other problems, too. Like the problem of the sunny side of the building being too hot while the shady side was too cool. Our Zoneline units just cooled one side of the building while heating the other.

And with hundreds of different people living in the apartments, there were lots of different temperature demands. Everyone isn't happy with a 75-degree norm. Our Zoneline units allow each tenant to set his own temperature. Whether he faces the sun and wants the temperature cooler or doesn't and wants it warmer.

At GE we have many types of Zoneline terminal package air conditioners. One of them solved a problem in Chicago. But all of them are flexible enough to solve heating or air conditioning problems in any structure, anywhere.

Look up your GE Air Conditioner distributor in the Yellow Pages, and give him a call. He'll be glad to give you the air.

GENERAL ELECTRIC

Lake Point Tower, Chicago
Developers: Hartnett-Shaw & Associates
Architects: Schipporeit-Heinrich, Inc.
Structural Engineer: William Schmidt & Associates
General Contractor: Crane Construction Company, Inc.
Mechanical Engineer: William Goodman

For more data, circle 8 on inquiry card

Otis now introduces the glass-walled, outside-mounted, all-weather, high-speed, solid-state, computer-controlled, double-deck elevator system.

Do you have a building that's ready for it?

If you're interested in the Otis double-deck concept, inside or outside your building, write to us. We'll show you current double-deck installations and detail our experience with tandem cars that goes back to the very first units installed. We'll also explain the economies of double-deck installation and operation, and the significant savings made possible by this Otis innovation. Write to Dept. R9, Otis Elevator Company, 260 Eleventh Avenue, New York, New York 10001.

Otis® HAS A SYSTEM

"Carpet of Antron® gives us

S. S. Kresge Company, International Headquarters, Troy, Michigan

a look we know will last."

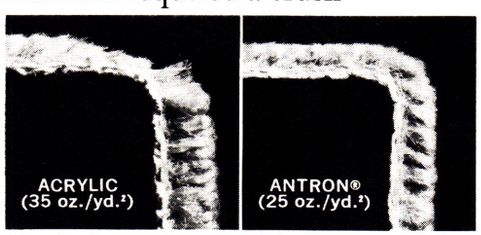
For the new International Headquarters of S. S. Kresge Company, Smith, Hinchman & Grylls Associates, Inc., architects and engineers, specified carpet made with pile of Antron* nylon.

Reason for choosing carpet of "Antron": the combination of "looks and life." It has the ability to retain its original appearance longer than carpet of other fibers. And, being nylon, it wears exceptionally well (see simulated stair-edge test results).

The lightscattering structure of "Antron" minimizes the appearance of soil. Concentrated spots tend to even out and blend with the overall color and texture of the carpet. Maintenance costs are minimized by the need for fewer wet cleanings than with carpet of other fibers. And, even after repeated shampooings, carpet of "Antron" returns remarkably close to its original appearance.

This glue down installation required a crush resistant pile fiber to stand up to heavy, daily traffic. Resilient "Antron" readily meets this test.

Specify "Antron" for high-traffic commercial carpet. It has no equivalent in long-term appearance retention.

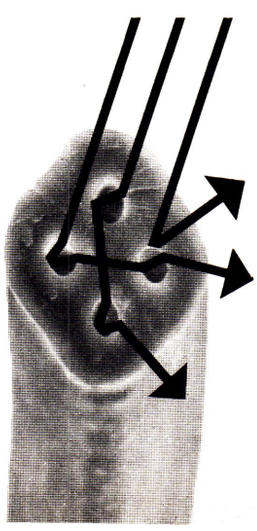


Abrasion test on simulated stair edges shows pile wear in level-loop carpets after equal exposure.

For more details, write Du Pont, Contract Specialist, Room 105AR, Centre Road Building, Wilmington, Delaware 19898.

For more data, circle 9 on inquiry card

DU PONT
REG. U. S. PAT. OFF.



How "Antron" hides soil. This cross-section magnified 1000X shows the four symmetrically located interior voids that run through each filament. They scatter light like the facets of a diamond to minimize the appearance of soil, with little loss of color clarity and luster.

*Du Pont registered trademark. Du Pont makes fibers, not carpets.

for design, flexibility, service in door automation

NORTON® AUTOMATIC DOOR OPERATOR SYSTEMS

TRANSOM MOUNTED OPERATORS (SERIES 2000)

Here's an unobtrusive, self-contained package; designed to be attractive in any location, styled to compliment any decor. Single units are contained in a smart, clean, aluminum housing. Double doors can be accommodated with two units mounted individually, or two units in a single housing. All installations are a pleasing addition to your overall design.

Here's reliable electro-hydraulic door automation that's easily installed on both new or existing construction. Ideal as a replacement for faulty in-floor operators. Or, they can be applied with surprising simplicity to any existing door. And, of course, all control schemes are available; for single or multiple door, one-way, or dual traffic.

Service is simple and always available. A replacement operator can be mounted in place in minutes to get your door back in action. And, the Norton Service Organization is nationwide, only a phone call away. Installation and service personnel are under direct factory supervision to assure you prompt, satisfactory work.

OVERHEAD CONCEALED OPERATORS (SERIES 4000)

For complete concealment in the smallest transom header; only 5″ of height and 4″ of depth. Fits easily into most manufacturer's headers; can be supplied already assembled into the header tube.

SLIDEAWAY SLIDING OPERATORS (SERIES 5000 & 9000)

For the safety and space saving of side sliding doors. Available in separate or simultaneous operating, single or double doors; all types of controls systems. Also, available as complete entrance packages.

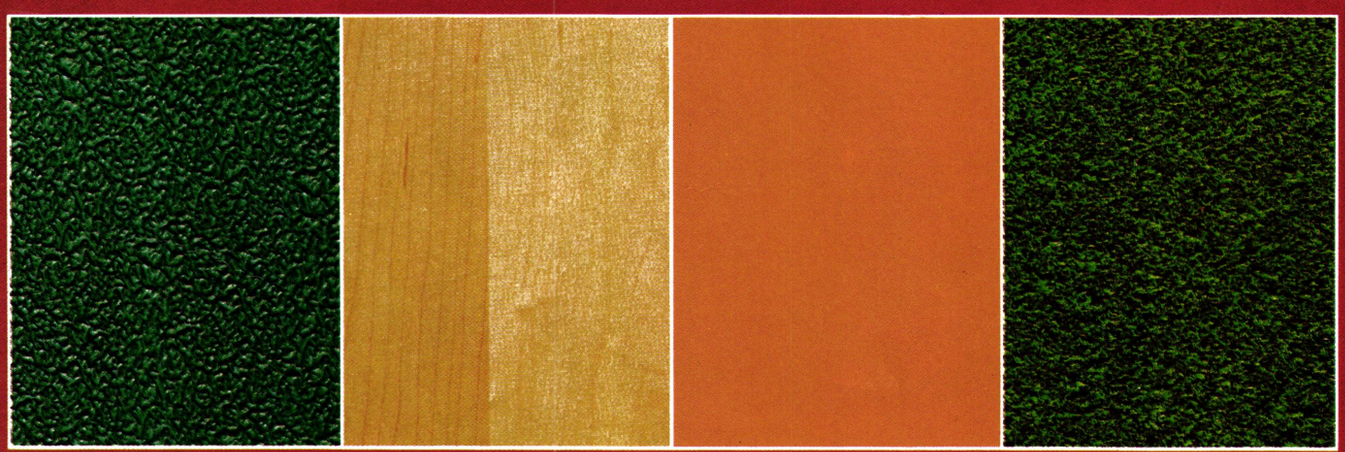
EATON
Security Products & Systems

For complete details, contact your Norton Representative or Eaton Corporation, Lock and Hardware Division, Norton Marketing Department, Box 25288, Charlotte, North Carolina 28212.

1193 C

For more data, circle 10 on inquiry card

Whatever the sport, Robbins has the surface.



SPORT-TRED HARD MAPLE PROTURF SPORT-TURF

Got a question about athletic surfaces? Get the answer from the world's leader: Robbins.

- The world's finest hardwood flooring . . . Lock-Tite is the only floor endorsed by the U. S. Handball Association.
- Laminated decks and hard maple walls for squash
- Sport-Tred for tennis, track, and basketball in any color
- Proturf, polyurethane elastomer for field houses and tracks

Find out about synthetic and wood athletic surfaces today from Robbins. Our staff of specialists is always ready to assist you in planning new or replacement facilities.

If it's athletic surfaces, Robbins has it! Just send us the coupon. We'll show you what we mean—with Robbins, there's a choice.

SEND COUPON FOR FULL INFORMATION

Please send me full information on Robbins
SPORT-TRED ☐ HARD MAPLE ☐ PROTURF ☐
I would like to consult with one of your specialists. ☐

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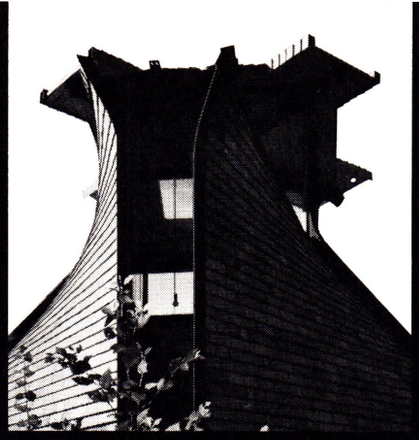
TITLE _____
COMPANY/SCHOOL _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
PHONE _____

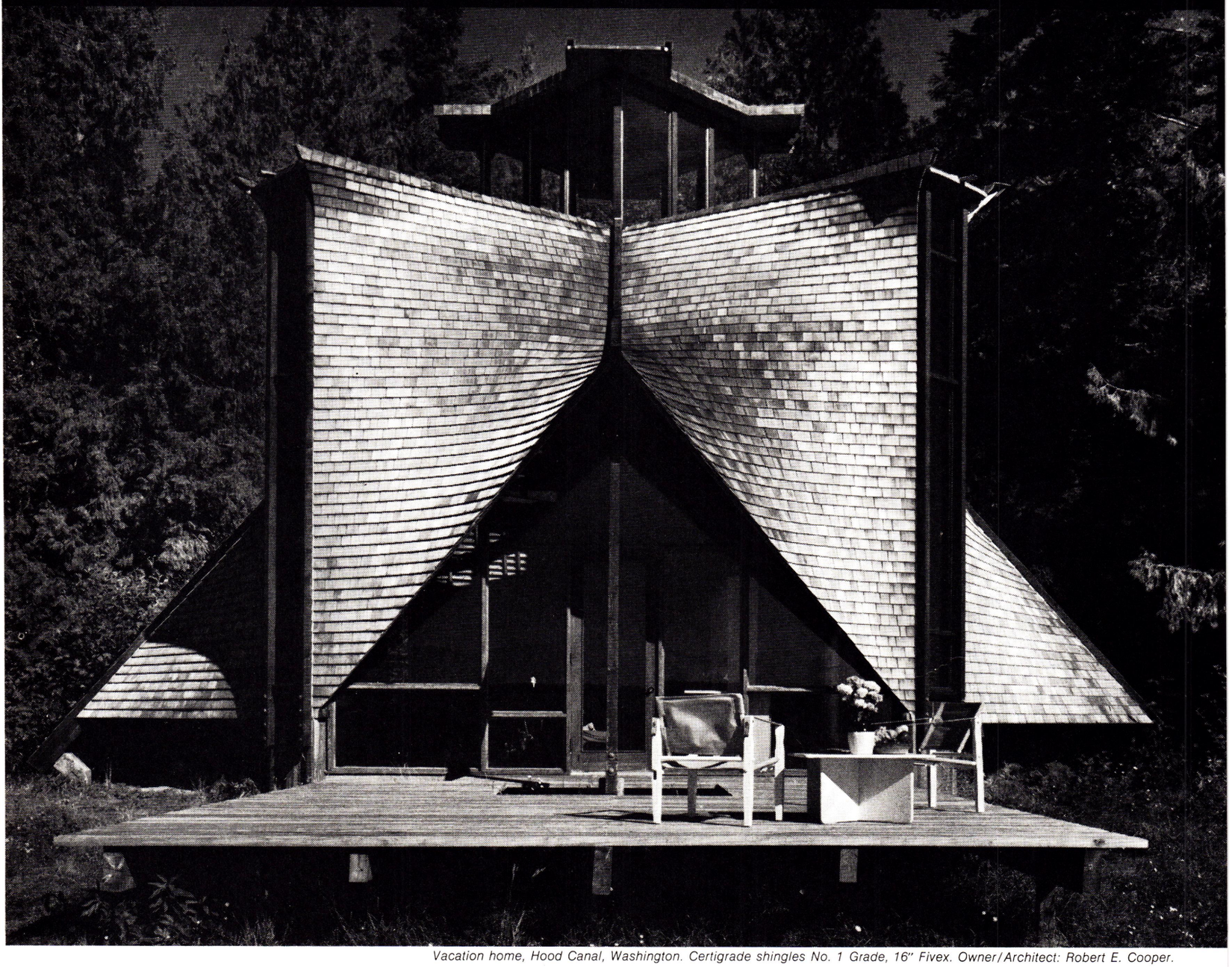
Robbins

Box 16902-AR, Memphis, Tn. 38116 AR

For more data, circle 11 on inquiry card



Red cedar shingles give rise to beauty.



Vacation home, Hood Canal, Washington. Certigrade shingles No. 1 Grade, 16" Fivex. Owner/Architect: Robert E. Cooper.

The upward thrusting lines of this vacation home convey a strong sense of energy. For an activity-oriented structure, nothing could be more appropriate. Equally suitable is the exterior application of red cedar shingles.

Red cedar conforms easily to the swirls and sweeps of the striking roof design.

And because the shingles come by their beauty naturally, they're very much at home in the wooded environment.

Red cedar is also durable. These shingles will last for decades without maintenance. And they'll withstand hurricane-force winds.

For your next vacation home project, insist on the real thing: red cedar Certigrade shingles or Certi-Split handsplit shakes. They're worth it. For details and money-saving application tips, write: 5510 White Building, Seattle, Washington 98101. (In Canada: 1055 West Hastings Street, Vancouver 1, B.C.)

THE CROWNING TOUCH OF QUALITY · RED CEDAR SHINGLES & HANDSPLIT SHAKES ·

Red Cedar Shingle & Handsplit Shake Bureau

One of a series presented by members of the American Wood Council.

For more data, circle 12 on inquiry card

Until you know all about ASG'S REFLECTOVUE,® you don't really know how good reflective glass can be.

Reflectovue does everything reflective glass is supposed to do—but with one dramatic difference: Reflectovue does it better.

Here's how.

Used with Tru-Therm® insulating units, Reflectovue has been proven a superior heat reflector. It has the best thermal performance, the lowest thermal "U" value, and the lowest shading coefficient when compared, color to color, to any other reflective glass in the industry.

On the practical side, it can cut costs by controlling heat loss and heat gain. So less equipment is needed for heating and air conditioning. Less fuel. Creating less pollution.

Take a look at the chart. See for yourself how good Reflectovue really is. And how it compares with your specification requirements. You'll get an introduction to the benefits of Reflectovue. And for the rest of the story, just call or write your nearest ASG office.

Then specify ASG's Reflectovue. It can make your building more than a building. More like a landmark to mirror your world. Sparkling. Dramatic. Changing with the day. Open. But still private. America's looking glass.

FOOTNOTES TO CHART:

(1) All given value of 1.1 for calculations. Different thicknesses of glass interlayers and metallic coatings will have insignificant effect on "U" value.

(2) No indoor/outdoor shading—Summer Value.

(3) 216 total solar BTU's—(Based on 1967 ASHRAE Handbook of Fundamentals—July 21—4 p.m.—west exposure —32° North Latitude)—Times shading coefficient. Average temperature for July 21—4 p.m.— is 93.6 degrees, with 72 degrees inside air temperature, there are 21.6 conductance BTU's to be added—Times the thermal "U" value of 1.1 = 23.76. Maximum BTU gain per square foot of vision lites—west exposure.

(4) ASG performance values taken from published data and authenticated by test reports from recognized testing laboratories. Names of specific data and laboratories provided on request.

ASG REFLECTOVUE®/TRU-THERM®
HIGH EFFICIENCY INSULATING GLASS

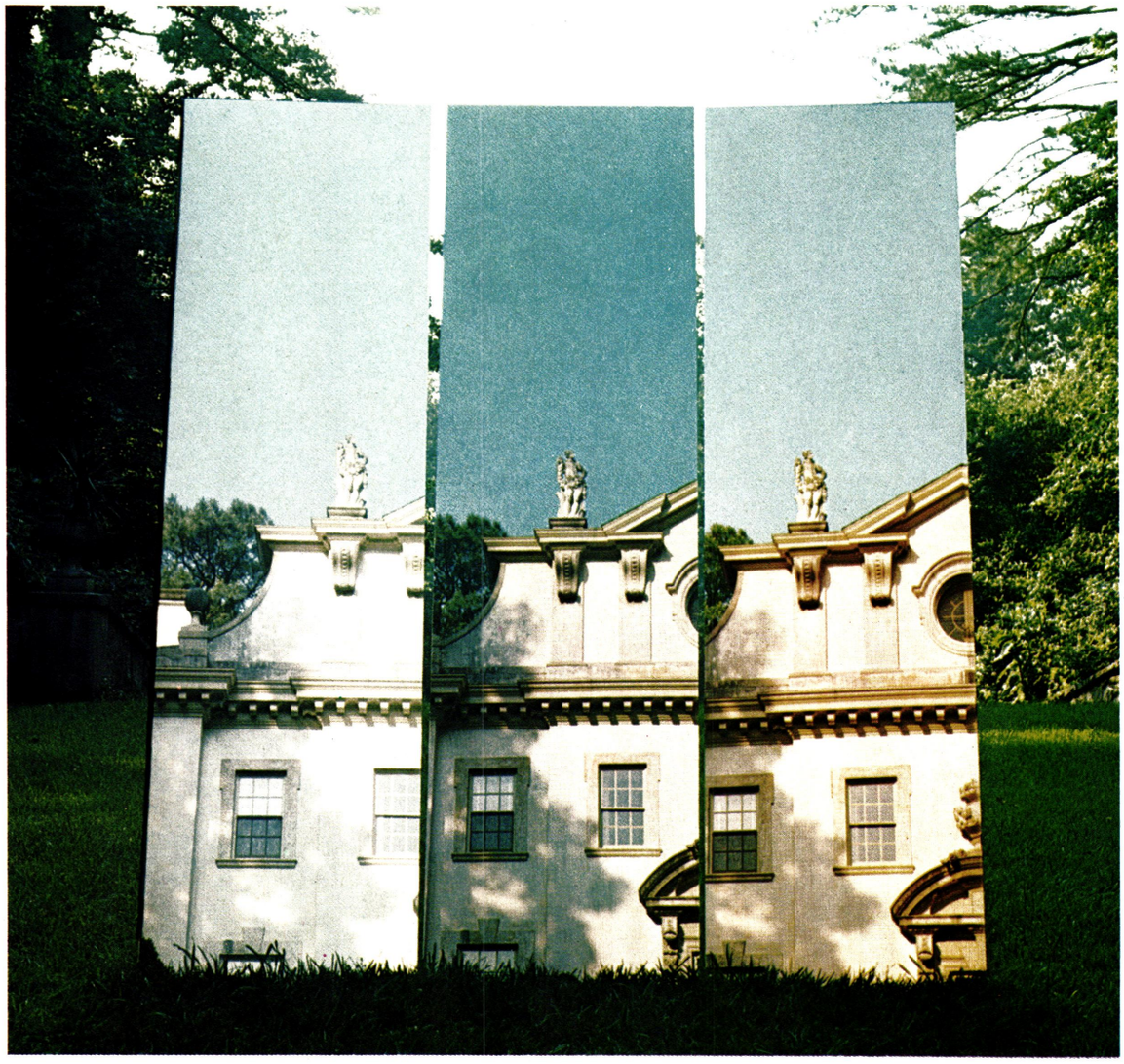
	Visible Light Trans. %	Thermal "U" Value (Summer)	Shading Coefficient (2)	Total Solar Heat Gain in BTU's (3)
10GI—Gold	8	.28	.07	21
20GI—Gold	17	.30	.13	34
35GI—Gold	32	.32	.26	63
10AI—Silver	8	.30	.12	32
20AI—Silver	17	.31	.24	59
10CI—Chrome	8	.46	.19	51
20CI—Chrome	17	.48	.34	83

ASG REFLECTOVUE®/LAMINATED
HIGH EFFICIENCY LAMINATED GLASS

	Visible Light Trans.%	Thermal "U" Value (Summer)(1)	Shading Coefficient (2)	Total Solar Heat Gain in BTU's (3)
10GL—Gold	10	1.1	.15	56
20GL—Gold	20	1.1	.24	76
35GL—Gold	35	1.1	.47	126
10CL—Chrome	10	1.1	.31	91
20CL—Chrome	20	1.1	.46	123

ASG
CREATIVE IDEAS IN GLASS

ASG Industries Inc.
P.O. Box 929, Kingsport, Tennessee 37662



Ambient light was eliminated in the rear of the glass to show actual appearance as glazed in a building facade. Left to right: Silver, Chrome and Gold.

For more data, circle 13 on inquiry card

CPR urethane provides more insulation, seals any shape, fights fire, resists chemicals, adds strength, absorbs sound.

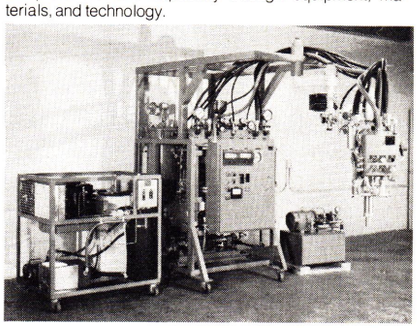
Great stuff. But if I specify, who will apply it?

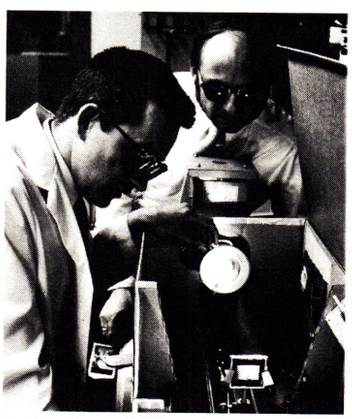
There's a network of applicators and fabricators across the nation, trained and equipped by CPR. They have the skilled personnel and the right equipment to pour, spray-in-place, or supply board stock.

They make use of the wide range of dimensionally stable CPR materials, such as the UL-classified isocyanurates: KODE 25™ and CPR 421 spray, both having low smoke-emission properties and high temperature tolerance.

So specify urethane insulation wherever you feel it's right for the job. There's a qualified CPR applicator or fabricator in your area, ready to help.

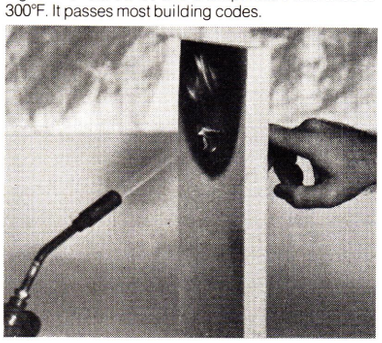
The Upjohn-owned Admiral Equipment Company, manufacturer of urethane application equipment, makes CPR the first and only urethane systems supplier offering a complete urethane capability through equipment, materials, and technology.





Upjohn's Donald S. Gilmore Laboratory provides CPR customers with the support of one of the world's most extensive facilities devoted to urethane product development and new applications technology.

KODE 25 is a new, urethane-type rigid isocyanurate foam insulation material, classified by Underwriters' Laboratories, Inc., with a Fire Hazard Classification Flame Spread Rating of 25, according to UL 723 and ASTM E-84 test method (UL Tunnel Test). This means higher fire retardance and a temperature tolerance to 300°F. It passes most building codes.



CPR is your single source for the most up-to-date data and information on urethane applications. Ask us what you want to know.

CPR DIVISION THE UPJOHN COMPANY, Dept. A
555 Alaska Avenue, Torrance, Calif. 90503

☐ Please send me more information on CPR insulation.
☐ Please send the name of your representative in my area.
☐ I would like a CPR sales engineer to call.

Upjohn
chemicals plastics research
CPR

Name_____ Position_____

Company_____

Address_____

City_____ State_____ Zip_____

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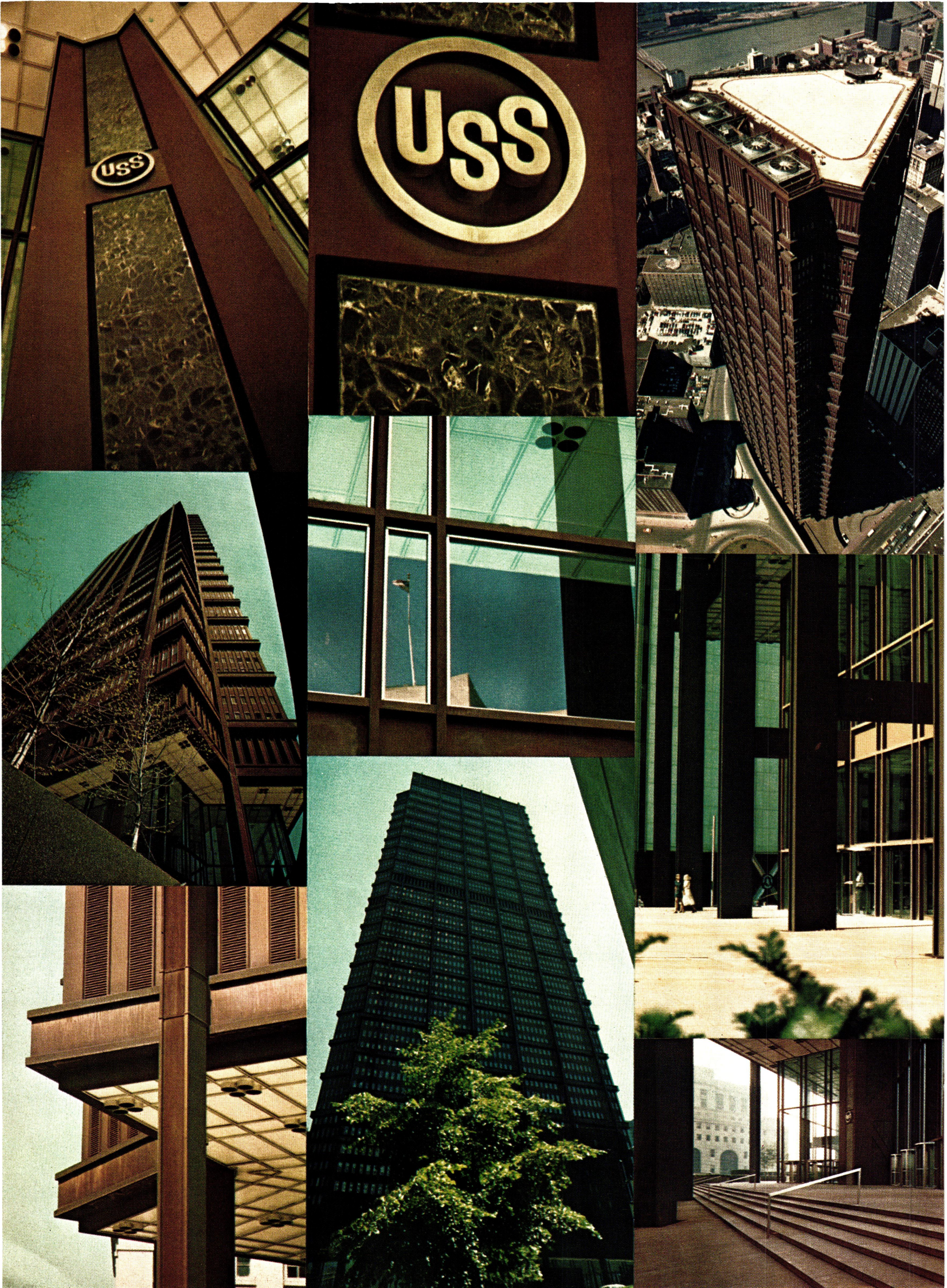
There's no place like home...


USS
USS

U.S. Steel's Pittsburgh headquarters building.

Our new Pittsburgh headquarters building towers 841 feet above the city's Golden Triangle. It's a bold triangular structure, with 64 floors, each almost an acre. From its underground parking levels to its rooftop heliport, it's a showcase of architectural and engineering innovations. A few:

Unpainted exterior. All exposed columns, plate walls and curtain walls are bare, unpainted USS COR-TEN Steel that protects itself with its own tight oxide coating. As weathering continues, color deepens.

Fluid-filled columns. The 18 exterior columns are hollow box sections, set three feet outside the walls and filled with fluid for fireproofing.

Top "hat." A rooftop, two-story-deep space truss or "hat" helps stiffen the structural frame and restrain thermal expansion and contraction of the exposed columns.

Primary and secondary floors. Only every third floor is connected to the exterior columns; the two floors above rest on it. Because the 64-story building is like a stack of three-story buildings, construction savings were substantial.

Snap-lock curtain-wall system. USS ULTIMET Curtain Wall in bare USS COR-TEN Steel frames the 11,000 stainless-steel windows. Precise roll-formed shapes snap-lock to mullions, eliminating welding, bolting or mechanical connection at site.

Modular layout. To facilitate servicing and conversion of the column-free office space, all wall and ceiling components are based on a 4′4″ square module.

No partition wiring. All electrical, communications and control wiring and air conditioning is installed in the cellular floors or in the ceiling sandwich. The lighting is centrally switched; intensity is changed simply by changing reflector assemblies.

Computerized operation. A complete operations and control system operates everything electrical —from air conditioning and elevator dispatch to fire-alarm control and light switching.

Systems analysis. Each innovation resulted from a systems-analysis design approach that involved everything from site selection to alternate methods of construction and space utilization. The building team of architects, engineers, contractors and USS technical experts examined economic and technological ramifications of each system in relation to the whole. Nothing was designed in isolation. And no system was allowed to dominate the total design.

The end result? A functional, efficient and productive corporate center, designed to satisfy our needs today and in years to come.

USS construction experts are available to discuss any aspect of the building. Simply contact our nearest sales office. Or write U.S. Steel, Dept. 7523, 600 Grant St., Pittsburgh, Pa. 15230.

Architects: Harrison, Abramovitz & Abbe.
Structural Engineers: Skilling, Helle, Christiansen, Robertson. And Edwards & Hjorth.
General Contractor: Turner Construction Company.
Steel Fabricator and Erector: American Bridge Division of United States Steel.

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USS United States Steel

We're not about to sell our roofing secrets.

Considering that we have been solving roofing problems since 1868, you'd think we would have learned a lot of things we might not want to share. That we'd prefer to keep these secrets to ourselves.

Not so. In fact, we'd rather shout these secrets from the roof-tops. It's to our advantage, as well as yours, that you end up with a good, substantial, properly constructed roof.

Furthermore, we have lots to shout about. J-M has a roofing specialist near you who has the know-how and experience to advise you on the design of built-up roofs—from membrane to proper roof structure and substrate. Advice that's free for the asking.

And backing up this expert are more experts. 11 J-M district engineers whose extensive experience qualifies them as consultants in situations where there may be especially sticky problems.

They can draw on the knowledge and resources of one of the world's largest producers of built-up roofing materials.

This is to say that, if you're planning a new structure, we will work with your people to develop detailed plans and recommendations on a roof that we can guarantee will stand up to specified years of punishment from the elements. Or, if you have a problem in an existing roof, we'll give you a plan to solve the problem, or to prolong the life of your roof. Free of charge!

What's more, if you decide to accept our recommendations—you're under no obligation to do so—we can put you in touch with approved J-M contractors who will use quality J-M roofing materials to install your new roof, or replace or repair the old one. But whether you use J-M roofing materials or someone else's, there's still no charge for our advice.

If you'd like to share in our roofing secrets, just contact your J-M district sales office. Or write: Johns-Manville, Post Office Box 5108, Denver, Colorado 80217.

It's no secret that you'll get the best advice available, with no strings attached. Plus a reliable, long-lasting roof.

Johns-Manville JM

They're yours for the asking.

For more data, circle 15 on inquiry card

7230

Another special place for Marlite: where walls have to take a beating.

When an interior design problem calls for high style *and* low upkeep, you need a special kind of wall: soilproof Marlite paneling.

In the bar shown above, the solution is textured Marlite Barnside Planks. This rugged new wall looks enough like real barn siding to fool a farm boy. Weathered, craggy, full of knots.

But the real beauty of Marlite is the way it stays good-looking in spite of rough treatment. Resists scuffs and stains, comes clean with a damp cloth once-over. So your client's maintenance costs are practically zero.

And Barnside is just one bright idea in Marlite's great collection. You'll find dozens of interesting textures, fresh colors, distinctive designs. For accent walls, wet areas, food preparation areas, heavy traffic zones and other special places.

Get up-to-date on Marlite by writing for color literature and a professional sample of new Barnside. Marlite Division of Masonite Corporation, Dept. 905, Dover, Ohio 44622.

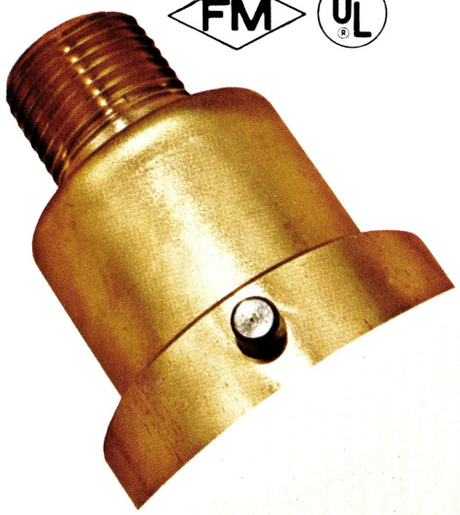
Marlite®

We make walls for special places.

For a professional sample of Barnside, write Marlite, Dover, Ohio 44622.

Marlite paneling is hardboard with man-made finish.

For more data, circle 16 on inquiry card



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A new look in automatic sprinklers

It's out of sight. The only truly concealed automatic sprinkler around. Perfect for the interiors you really care about.

Hidden up there behind a ceiling-flush cover plate . . . THE UNSPOILER is ready to pop out—then spray away when fire threatens. It's Factory Mutual Approved; approved by New York City Board of Standards and Appeals; U.L. listed for bright and satin chrome finish.

So fit out your best looking interiors to snuff out fires—beautifully. Write for our complete, fact-packed, full color brochure on THE UNSPOILER.

Star Sprinkler Corporation, 4545 Tacony Street, Philadelphia, Pa. 19124

PAT. PENDING

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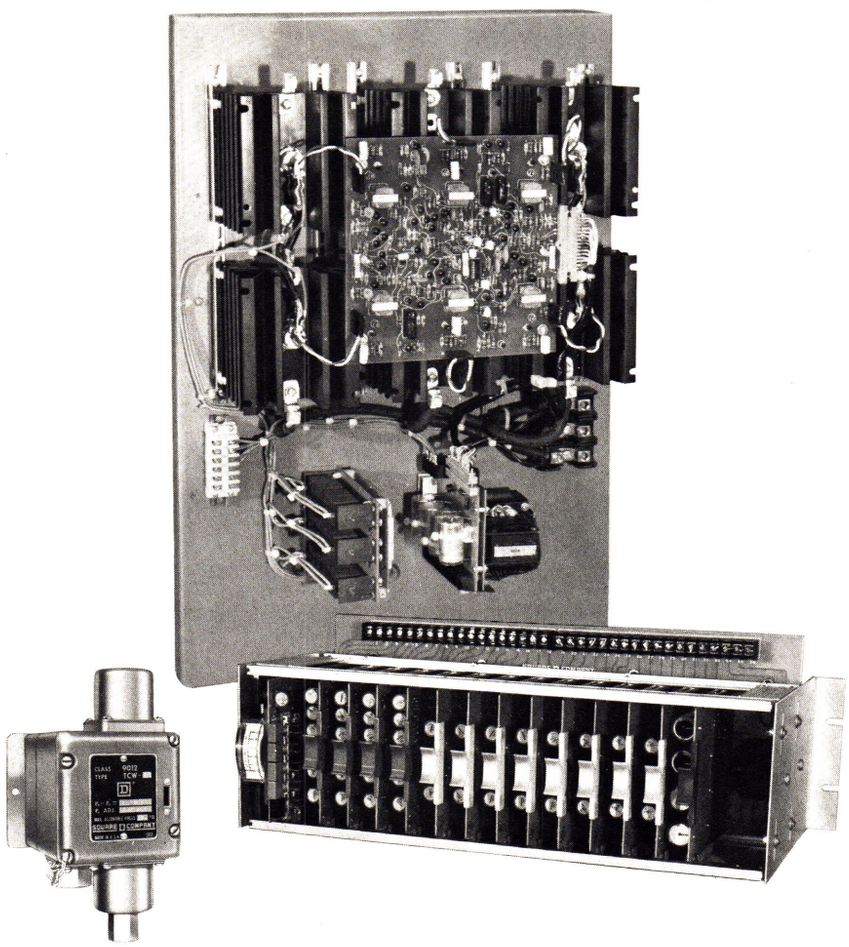
ADJUSTABLE SPEED IS JUST PART OF WHAT MODERN PUMPING IS ALL ABOUT.



First of all, Square D builds and supplies its own pressure transducer, the brains of the entire system. The transducer furnishes the signal that controls both the speed and the sequencing.

Next, we provide a solid state programmer. This controls the automatic starting and stopping of all drives, and sets the adjustable speed range for each drive.

Finally, we offer an adjustable speed unit in a compact package that's built with simplicity and serviceability in mind. For that matter, the entire system—transducer, programmer and adjustable speed unit—provides an optimum degree of versatility and easy servicing. Regardless of what might go wrong, you can isolate the problem in a matter of minutes. Plug-in circuit cards and monitoring lights simplify maintenance dramatically.

You can use this new pump control system for both level control and pressure control applications. It is also possible to by-pass the adjustable speed controls to obtain constant speed pumping in an emergency.

Get all the details on this versatile, dependable, all solid-state system. Contact your Square D field office. Or, write Square D Company, Dept. SA, 4500 Lee Road, Cleveland, Ohio 44128.

SQUARE D COMPANY

Wherever Electricity is Distributed and Controlled

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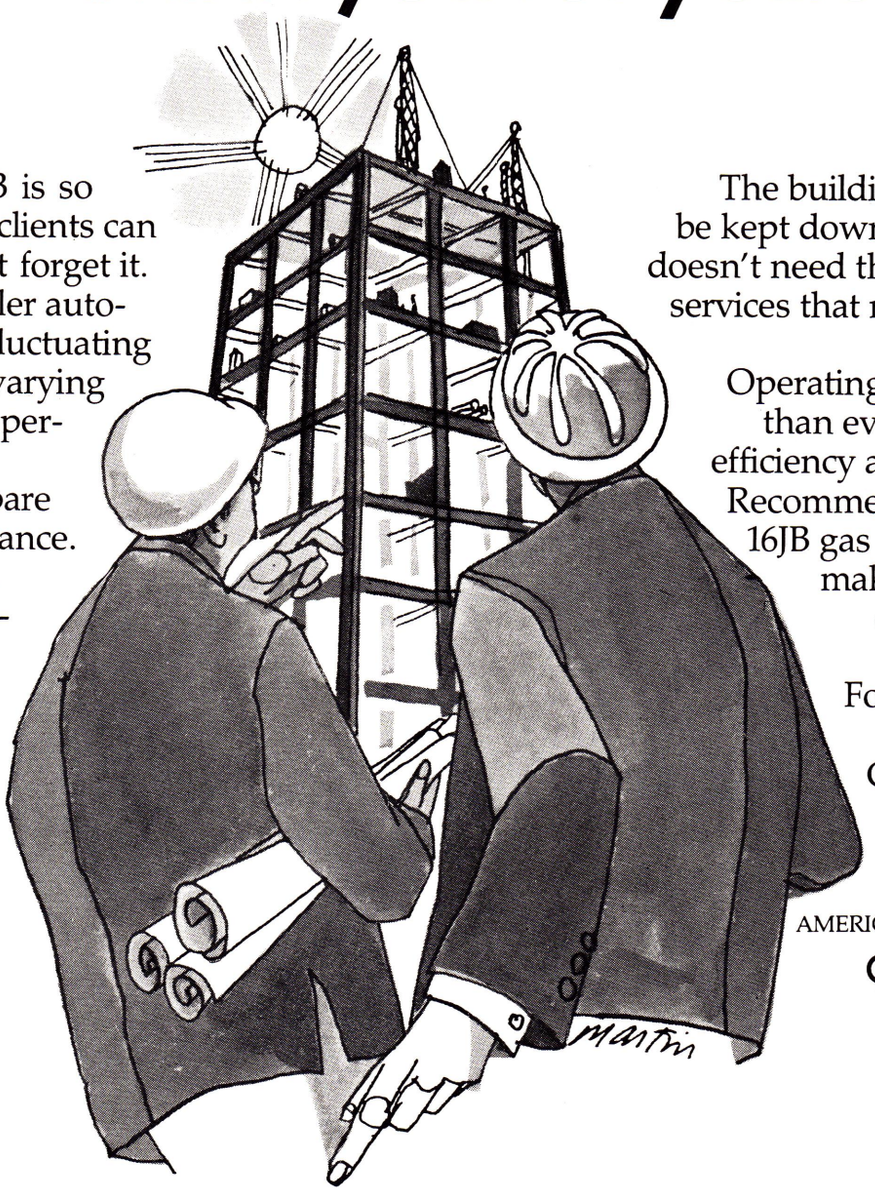
Recommend the Carrier 16JB gas absorption machine. Your client will thank you for years.

The Carrier 16JB is so trouble-free that your clients can put it in and just about forget it.

This unique chiller automatically adjusts to fluctuating steam pressure and varying condensing water temperatures.

It needs only a bare minimum of maintenance. Your clients can even get a planned maintenance contract from the factory.

You can put the machine just about anywhere. There's no vibration and very, very little noise.



The building's first costs can be kept down because the 16JB doesn't need the heavy electrical services that mechanical equipment needs.

Operating costs are lower than ever, too. The 16JB's efficiency actually saves gas.

Recommending the Carrier 16JB gas absorption chiller makes for a satisfied client. And that's good business.

For the details, contact Carrier Air Conditioning Co., Carrier Parkway, Syracuse, N.Y. 13201.

AMERICAN GAS ASSOCIATION

Conserve natural gas. It's pure energy.

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For more data, circle 24 on inquiry card

News in brief

The Architect/Engineer Selection Bill, sponsored by Rep. Jack Brooks (D., Tex.) has passed the House by a large vote after winning, by 276 to 114, a key test on an amendment which would have diluted the measure. The bill, which would grant legislative status to the traditional procedures for selecting firms to perform architectural and engineering services for the Federal government, now awaits action by the Senate Government Operations Committee. The bill, sponsored in the Senate by Sen. John L. McClellan (D., Ark.) and Sen. Charles H. Percy (R., Ill.), would instruct government agencies to select architects and engineers on the basis of their competence and qualifications at a negotiated fee that is fair and reasonable. For more details, see Architectural Business, page 55.

"Design in the Americas," the first design congress in this hemisphere, will take place in Mexico City on October 30, 31 and November 1. Co-sponsored by the Industrial Designers Society of America and several Mexican agencies, the theme of the Congress is "The Effect of Change: the Use and Preservation of the Hemisphere's Resources and the Development of the Community through Design." Advance registration or further information can be made through the IDSA National Office, 60 West 55th St., New York, N.Y. 10019.

The Urban Redevelopment Authority of Pittsburgh announces a design competition for the proposed Manchester Street Park. The park will be part of a 170-acre renewal site in Pittsburgh's north side. The competition is open to urban designers, architects, engineers, landscape architects and students. Three cash prizes of $4,000, $2,500 and $1,000 will be awarded to first-, second- and third-place winners.

For information: Pittsburgh Urban Redevelopment Authority, 200 Ross Street, Pittsburgh, Pennsylvania.

To provide the architects working in corporations and industry with support, contacts, and the latest techniques being used in private practice, The American Institute of Architects will sponsor a seminar designed especially for them at Columbia, Maryland, October 10-11, 1972. The Seminar for Architects in Industry will include prominent architects both inside and outside of industry, an address by AIA president Max O. Urbahn, FAIA, and a tour of Columbia. For information or to register, contact Maurice Payne, AIA, at The American Institute of Architects, 1785 Massachusetts Avenue, N.W., Washington, D.C. 20036.

Rep. Edward I. Koch (D-N.Y.) has introduced a bill to mandate the inclusion of works of art in new Federally constructed buildings. The Koch proposal would require that ½ of one per cent of a building's construction cost be allocated for paintings, sculpture and other artistic work. The General Services Administration has already authorized the expenditure of that amount for this purpose but the authority has rarely been used. Since October 1969, only 14 of the 55 GSA approved projects (or approximately 25 per cent) have been designed to include fine arts, and of these only three have actually had funds allocated for the works of art.

Forty-four disadvantaged minority students from across the country have been named the 1972 recipients of The American Institute of Architects/Ford Foundation Architectural Scholarships. This year's winners, four of whom are women, include 37 blacks, two Orientals, two Mexican-Americans, a Puerto Rican, and an American Indian. They bring to 95 the total number of students who have been given the opportunity to obtain an architectural education under this social scholarship program.

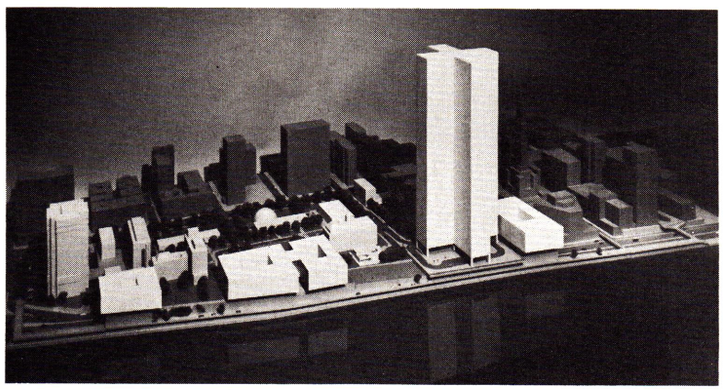
Dean George Anselevicius of the School of Architecture, Washington University, St. Louis, Missouri, will be visiting academician at the School of Architecture, the E.T.H. in Zurich, Switzerland from November 1972 to February 1973.

A conference designed to teach architects how to participate effectively in HUD-assisted housing programs for low- and moderate-income families, will be sponsored by The American Institute of Architects on October 5-6, at the Mayflower Hotel, Washington, D.C. The sessions will be chaired by Charles L. Edson, a former HUD official, who has conducted many similar workshops. For information or to register, contact M. Carter McFarland, at The American Institute of Architects, 1785 Massachusetts Avenue, N.W., Washington, D.C. 20036.

Readers are reminded that submissions to RECORD INTERIORS 1973 and RECORD HOUSES are due October 15. For further information, see page 113.

NEWS REPORTS

1



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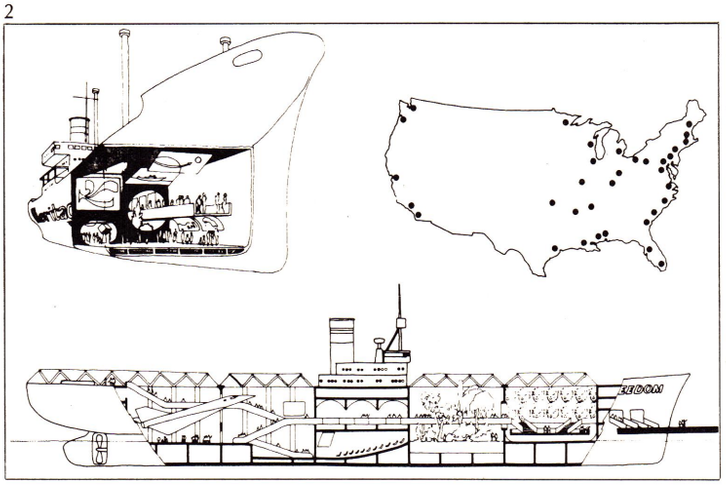

1

NEW MEDICAL FACILITIES TO RISE OVER EAST RIVER DRIVE

Plans for additions to a major complex of hospitals, a medical school, teaching and research institutions, utilizing air rights over the portion of Manhattan's East River Drive between 61st-71st Streets, were released recently in New York. Planned by Skidmore Owings & Merrill, the $300 million development would involve The New York Hospital, the Cornell University Medical College, the Cornell University-New York Hospital School of Nursing, The Rockefeller University and the Hospital for Special Surgery.

It would add more than 2.6 million square feet of new facilities for the institutions, replacing about one million square feet of existing structures that are now regarded as obsolete.

The development would contain:

- A new in-patient tower building for The New York Hospital-Cornell Medical Center, in the form of an X-shaped building, some 40 stories high. It would contain 1,530,000 square feet and would replace the 1,088 hospital beds in the present hospital building.
- A "North Building," at the northern end of the air rights space, would contain 286,000 square feet and be used for ophthalmology, psychiatry, rehabilitation and other Medical Center services.
- An underground garage for the Medical Center which would provide 450 parking spaces for visitors and staff.

The Rockefeller University's interests focus at present on new facilities for a library, extension of space for biomedical research, an animal care facility, a computer center, and auditorium-conference center.

The plan also includes an elevated esplanade which would extend from East 63rd to East 72nd Streets along the East River and would replace the present pedestrian footpath.

New York State legislation was approved in 1971 that would permit the City to sell the air rights to the institutions. Both the New York City Planning Commission and the Board of Estimate must approve the proposed site plan. The City Planning Commission is now reviewing the project.

OLMSTED EXHIBIT AT NATIONAL GALLERY

The National Gallery of Art, in Washington, D. C., will hold a major exhibition this fall illustrating Frederick Law Olmsted's finest achievements in city planning and landscape architecture. The exhibition will cover Olmsted's visionary work in the West with natural parks as well as his work in numerous major cities throughout the country. It will be on view at the Gallery from October 31 through January 7, 1973. Entitled "Frederick Law Olmsted/U.S.A.," the exhibition will appear simultaneously with another at the Whitney Museum of Art, in New York City, which will focus principally on Olmsted's work in and around New York. Organized for the National Gallery by the American Federation of Arts and the Olmsted Sesquicentennial Committee, it will subsequently be circulated to major museums nationwide by the American Federation of Arts.

"The intent of the National Gallery's exhibition," according to director J. Carter Brown, "is to emphasize Olmsted's extraordinary contribution to the Nation's visual heritage. We wish to salute Olmsted during his sesquicentennial year as one of America's most prescient and sensitive artists."

"This show will make the eighth exhibition in our series honoring American artists, and will be the first devoted to a designer/landscape architect."

2

BICENTENNIAL COMMISSION ENDORSES MARITIME COMMISSION CONCEPT

At a recent meeting of its Executive Committee, the American Revolution Bicentennial Commission endorsed an interesting program of travelling maritime exhibits.

Ships, either displays in themselves, or containing exhibits by a variety of sponsors, would circulate among a nationwide network of special exhibition piers prepared by participating port cities so that each city would have a continually changing array of ships on display throughout the program period. The ships would exhibit our maritime past, present and future in the following three categories:

1) Maritime Heritage: Our maritime history would be brought to life on ships drawn from the wealth of historical vessels already restored by independent efforts throughout the country representing virtually every type from almost every era in our maritime past.

2) Maritime Festival: A variety of ships from reserved fleets or private sources could be economically converted into excellent floating exhibition halls serving the needs of national, regional, state, corporate and institutional sponsors. These exhibit ships would travel the circuit of participating ports reaching audiences throughout the country. Foreign nations could be invited to send exhibit ships to U.S. ports in response to President Nixon's "Invitation to the World" message of July 4, 1972.

3) Maritime Horizons: The potential of our maritime future could be foreshadowed in the display of experimental and research vessels as well as an exhibit of ships oriented toward our future on the seas.

The proposal also suggests that under-utilized piers could be converted by participating cities into regional centers of Bicentennial activity containing a host of locally sponsored activities, events and financially self-supporting amusements on the pier together with the changing selection of visiting exhibit ships.

Exhibit ships would be scheduled so that each port would have a continually changing mixture of maritime heritage, maritime festival and maritime horizon exhibits throughout a program period of three years starting in 1976.

LOUDOUN COUNTY VS LEVITT & SONS, INC.

Homebuilders throughout the nation were bemused last month to see a bedroom community near Washington, D.C. win a court victory over the country's largest single provider of shelter.

The parties were Loudoun County, outside the nation's capital, and the firm of Levitt and Sons, Inc.

The New York builder had sought to construct a $125 million, 1,270-acre new town for 13,342 residents in Loudoun County, and he had hoped to do it without making the required contribution to the cost of public facilities to serve the development. Loudoun's supervisors denied him permission to build by refusing a rezoning request on the premise that a governmental unit should have power to slow growth if public services required by new housing would outstrip its revenue base. A county circuit court upheld Loudoun on the Levitt appeal and last week the builder said he would drop the legal approach and resubmit plans. Loudoun's determination has been watched across the nation as it focused attention on the principle that a government entity might be able to block—or at least deflect—threatened sprawl with the enforced payment tactic.

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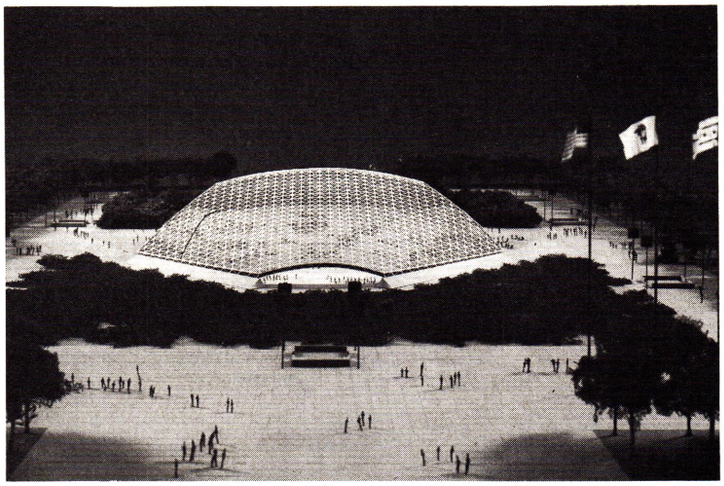


3

FUNDS FROM SEVERAL SOURCES TO BUILD SCHOOL FOR SPECIAL CHILDREN

New York Governor Nelson Rockefeller has announced the award of a $1.2 million state aid grant to the Brooklyn School for Special Children to help finance the construction of a $3.6-million comprehensive center to serve the mentally retarded, the brain injured and the emotionally disturbed in southwest Brooklyn. The Brooklyn School's new 37,000-square-foot structure, designed by Edgar Tafel, will be built on a 4.5-acre site at the northwest corner of Shore Parkway and Bay 44th Street in the Bensonhurst section.

To help meet the cost of the center's construction, the Brooklyn School and its supporters raised $1,040,000. The State's $1.2 million grant is being supplemented by a $300,000 Federal grant. The balance is being financed through a State Housing Finance Agency mortgage which was arranged under the Mental Hygiene Law.

Facilities will include a medical and dental unit, a large multi-purpose room for auditorium-gymnasium-dining functions, a workshop, 20 classrooms, a swimming pool, a vocational training section, and therapy rooms.

Among the programs and services offered in the School are a pre-primary school for severely retarded and brain injured children, an instructional program for school children between the ages of six and 17, an educational and intensive pre-occupational training program for young adults who have then returned from state schools and hospitals, and psycho-diagnostic evaluations and related services for proper placement, treatment and referrals.

ACSA MEETS IN ASPEN

At its annual meeting in Aspen, Colorado, the Association of Collegiate Schools of Architecture, Inc., voted in its new officers and peered into the future of architectural education. This year, seven concurrent workshops were held on topics such as public environmental education roles, new exam/accreditation/registration and minority education.

Along to help in these workshops were ASC/AIA president Faye D'Avignon, NAAB president Art Sidells, NCARB president Tom Sedgewick and AIA commissioner of education and research Jim Foley. Over 115 ACSA faculty and administrators came and took part, representing schools from all over the country. A special note was the address of guest speaker Arnold Arbeit, chairman of the board of the National Institute for Architectural Education. Arbeit's reportage on the relatively unchanged competition basis of NIAE's activities drew a little good-natured ribbing from the assembly, but it was clear that the organization was doing the best it could within the specific limits of the wills that create its endowment. Another highlight was a question and answer session with a representative from the Office of Civil Rights (HEW) on the "affirmative action plan" issue. Schools all over the country are under fire for not having enough female and/or minority faculty. Non-compliance carries the very real threat of loss of Federal grants. Asked what ACSA could do, HEW guest speaker Peter Holmes suggested compiling a directory of potential female and minority faculty members. This would dramatize the general unavailability of such people and help place those few who are available.

Four new officers were installed on the board of directors this year. Assuming the presidency is Robert S. Harris, now serving as dean of the School of Architecture at the University of Oregon.

The new vice-president, replacing Harris, is Sanford Greenfield, FAIA, director of education at the Boston Architectural Center. Richard Wheeler, director of architecture graduate studies at the University of Cincinnati, was elected ACSA's new secretary and John Eberhard, dean of the State University of New York (Buffalo) School of Architecture is the new Northeast regional director replacing Sanford Greenfield.

NATIONAL POLICY TASK FORCE WORKING ON PART 2

The National Policy Task Force of the American Institute of Architects has embarked on the task of preparing its second major report, a document that is expected to delineate the methods for implementing the recommendations contained in its first publication, *A Plan for Urban Growth*, which was approved by the 1972 convention in Houston.

Members met at the Urban Life Center in Columbia, Maryland. Chairman Archibald Rogers, FAIA, Baltimore, said following the session that he was confident a fairly comprehensive framework for the second report would be ready for the AIA board meeting here in December and that the objective of placing the final draft before the San Francisco convention next year would be met.

The Task Force itself realizes that a mammoth effort to publicize its study and to influence governmental agencies to act on its recommendations lies ahead.

4

GRANT PARK IN NEWS AGAIN

A music facility proposed for Chicago's Grant Park faces an uncertain future. The Chicago Park District wants to build a $3 million music shell above a two-level, $27 million underground parking facility. The 59-foot-high, steel-framed, translucent shell, designed by C. F. Murphy Associates, would cover the present 16-acre surface parking lot and allow the "temporary" traditional music bowl in the park to be removed. But an old law which has been upheld by the U.S. Supreme Court in previous contests, provides that no obstruction can be built in the lakefront park without the permission of all the landowners whose property faces the park. So far, at least two of the 39 owners have indicated they're against the plan.

The Metropolitan Housing and Planning Council, a private civic group, also opposes the shell because it could set a precedent for building other structures in Grant Park. Danforth Brenner, architectural consultant for the Council, recommends a demountable, tent-like structure since the shell is used only two months a year. To reduce the effect of even a temporary structure, Brenner suggests the creation of a sloping amphitheater so that a music shell—whether temporary or permanent—would not be visible above the park's surface.

STERNBACH APPOINTED TO REGIONAL ADVISORY COUNCIL

Stamford architect Paul Sternbach has been appointed a member of the Regional Public Advisory Panel on Architectural Services. During his two-year term, he will advise GSA in the selection of architectural/engineering firms for the design of new Federal buildings and review proposed designs.

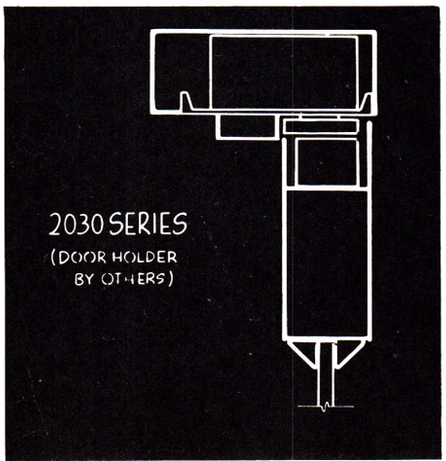
Hyatt Regency O'Hare, Chicago. Architect: John Portman & Associates, Atlanta, Ga.

DOORWAY NOTES . . .

HERE, THE LCN PACER (2030 SERIES) PROVIDES CONCEALED HYDRAULIC CONTROL OF HEAVY EXTERIOR DOORS . . . AND MAKES A CONTRIBUTION TO THEIR "THINNER" LINEAR LOOK. FITS INSIDE 1¾" x 4" TRANSOM BAR. CATALOG ON REQUEST. SWEET'S, SEC. 8.

LCN CLOSERS, Princeton, Illinois 61356

Concealed. Compact. Adjustable spring power. Adjustable back-check for control of opening swing.



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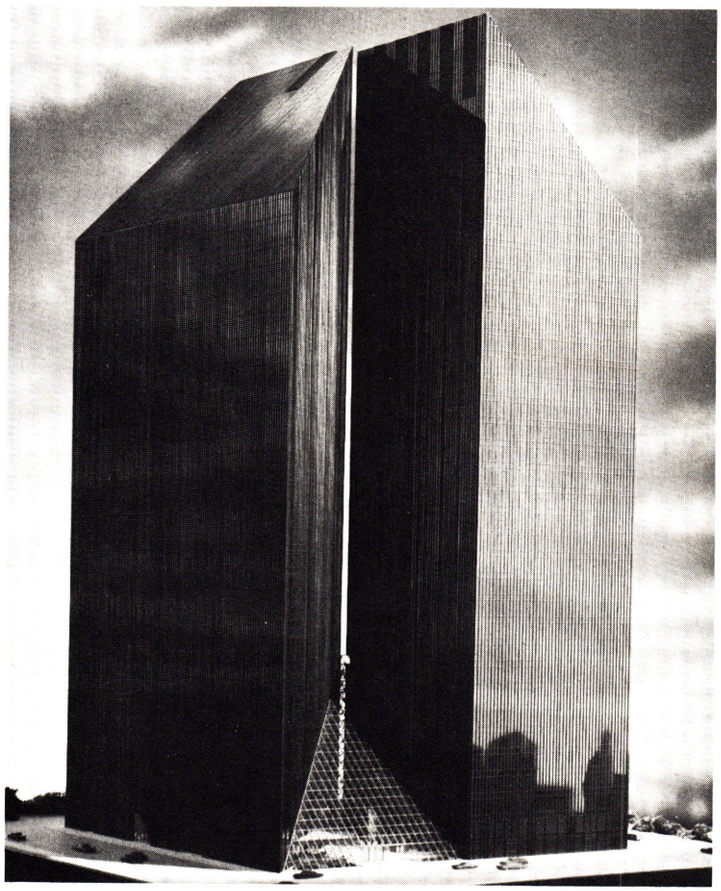
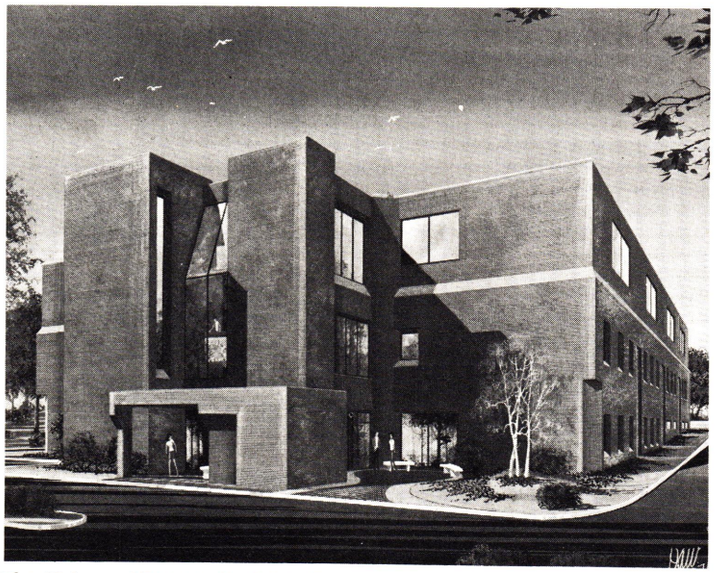


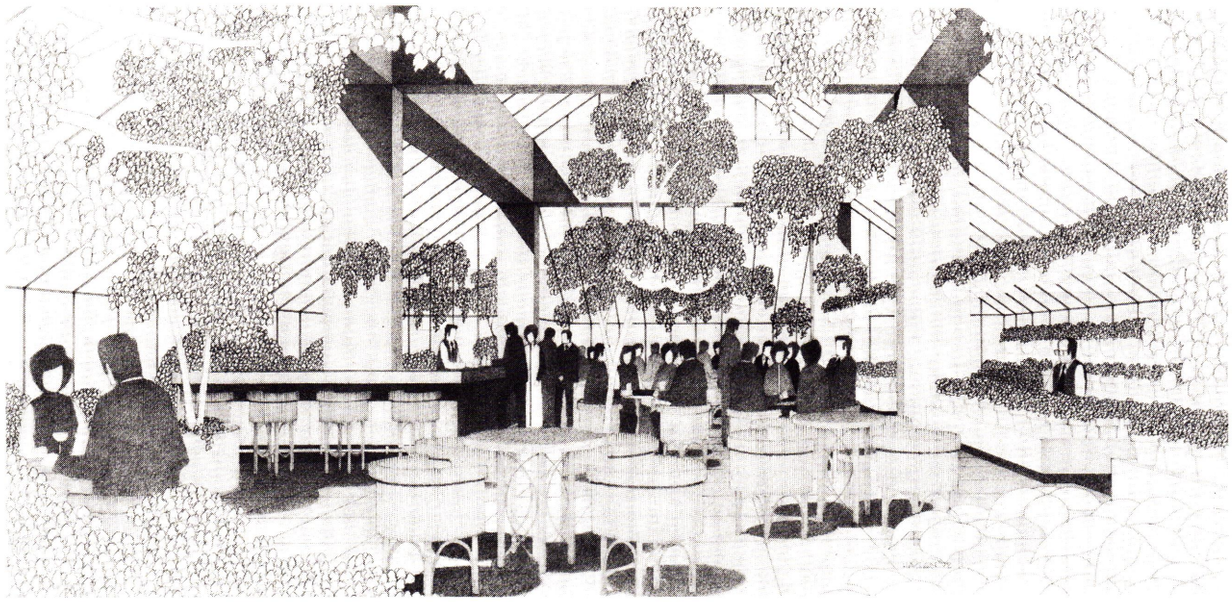
Pennzoil Place in Houston by Philip Johnson and John Burgee, with Wilson, Morris, Crain & Anderson associate architects, will have two identical trapezoidal towers 495 feet high with 34 levels clad in a curtain wall of bronze glass and anodized bronze aluminum. Sloping glass-roofed space frames rising to a height of eight stories form air-conditioned entrance courtyards. Construction is scheduled for fall.

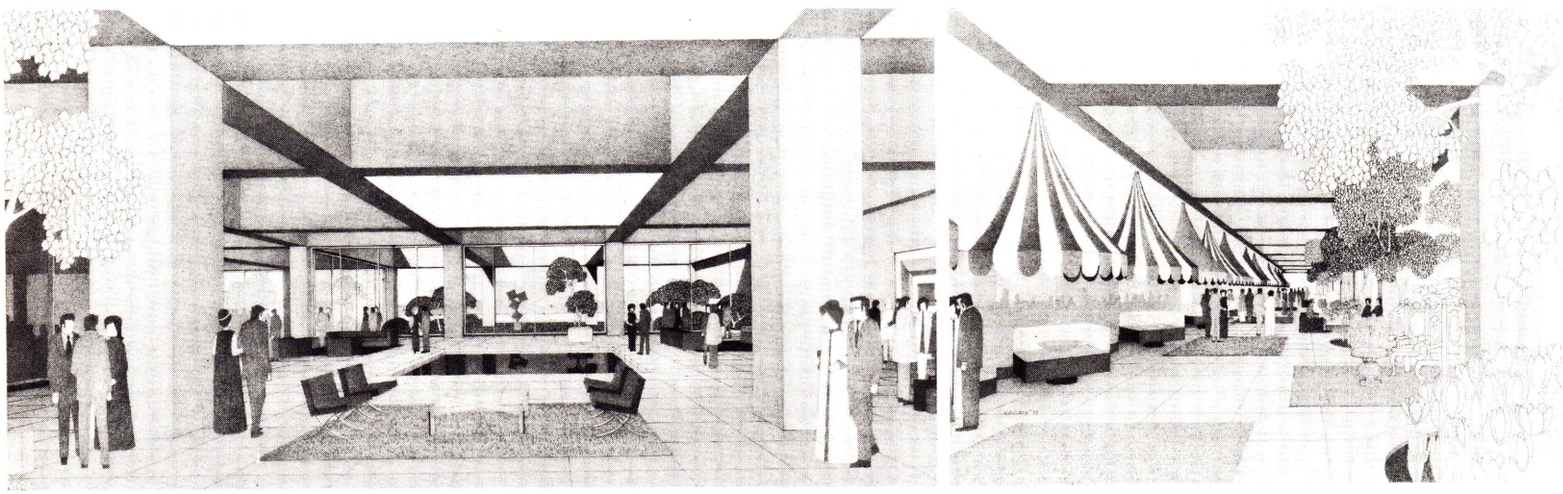


The Kirkwood/244 Medical Arts Facility in St. Louis by Martin Bloom Associates, Inc. is programmed to have pharmaceuticals and a laboratory on the first floor; the remaining floors are potential lease areas. Structurally the building combines exterior bearing masonry walls with internal steel frame.

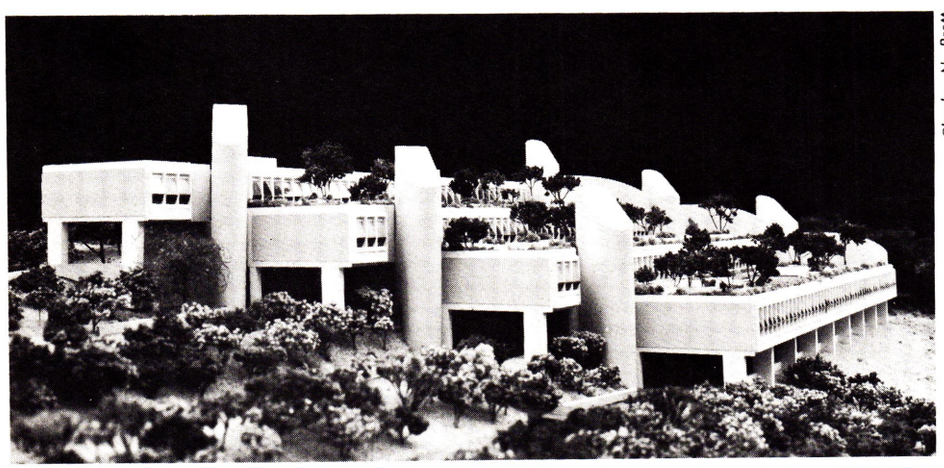
The Fairmount Colony Square Hotel in Atlanta is part of a "micropolis" of offices, apartments, shopping, et cetera, all designed by Jova/Daniels/Busby. It will have an outside glass elevator to the 31st story lounge. Mr. Jova said the main objective of the hotel "is not to dazzle you, but to pamper you," which means a sewing kit in your room, two pillows—one soft and one firm, complimentary newspapers at breakfast, walk-in closets, among other things.

Sunset Car Wash on West Hollywood's Sunset Strip by Robert L. Barnett Associates has massive sloping poured concrete walls which shield the car wash machinery from view and shield the neighborhood from noise, water and suds. Its water recycling system reuses the wash water and filters dirt, chemicals and solids from it so they won't be flushed into the city sewer system. There is an air-conditioned, carpeted and sound-proofed car wash observation corridor.



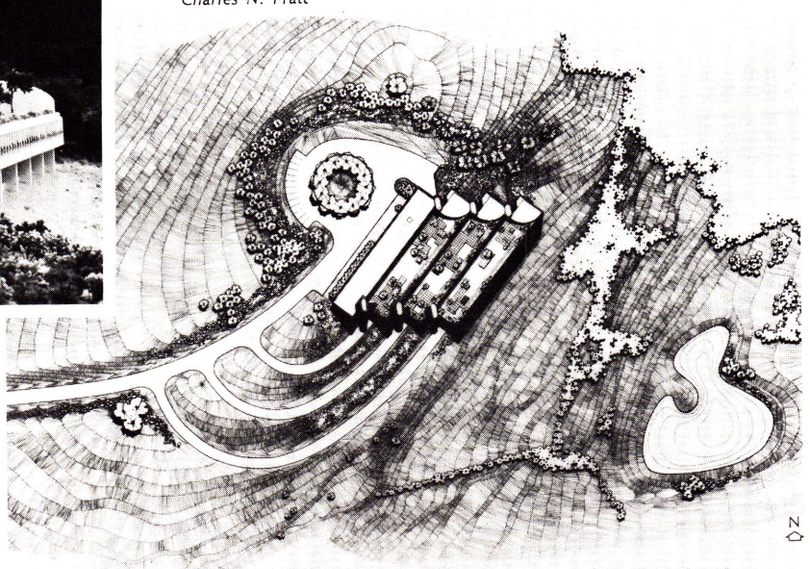


Water Tower Plaza in Chicago by Loebl, Schlossman, Bennett & Dart, with C. F. Murphy Associates as associate architects, will house Marshall Field & Co., Lord & Taylor, boutiques, specialty shops, The Ritz-Carlton Hotel and 40 floors of apartments. The public spaces of the hotel, seen in preliminary drawings above by Fred Schmid Associates, include The Greenhouse, a restaurant and cocktail lounge draped with flowering plants and shrubbery, a lobby in the form of an atrium, and a Promenade with sitting bowers opposite canopied showcases displaying merchandise available in the stores below. The low-rise portion of the building is topped with a three-acre glass-enclosed rooftop which covers The Greenhouse, the Promenade and a Japanese Garden among other extensively planted areas.

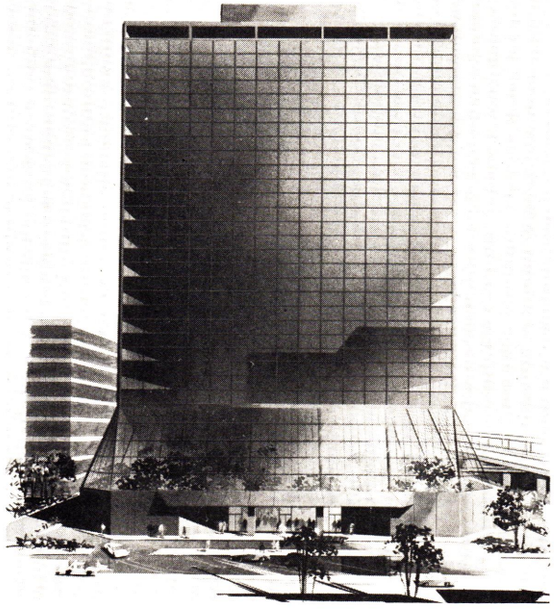


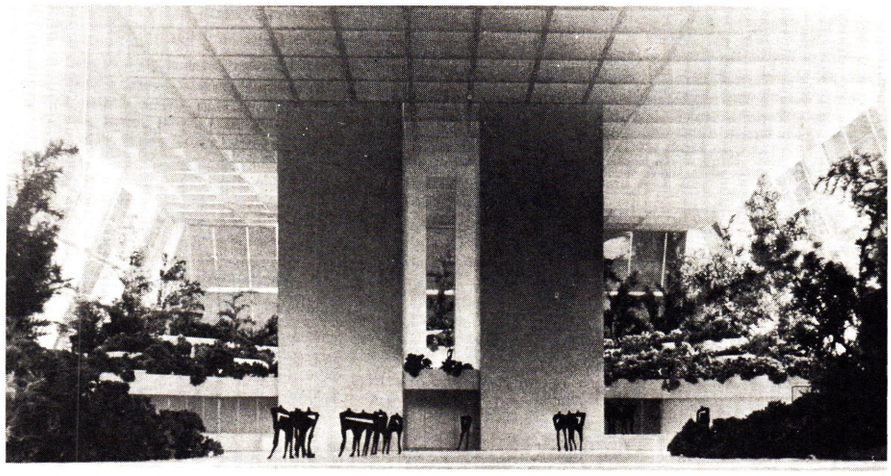
Charles N. Pratt

Charles N. Pratt

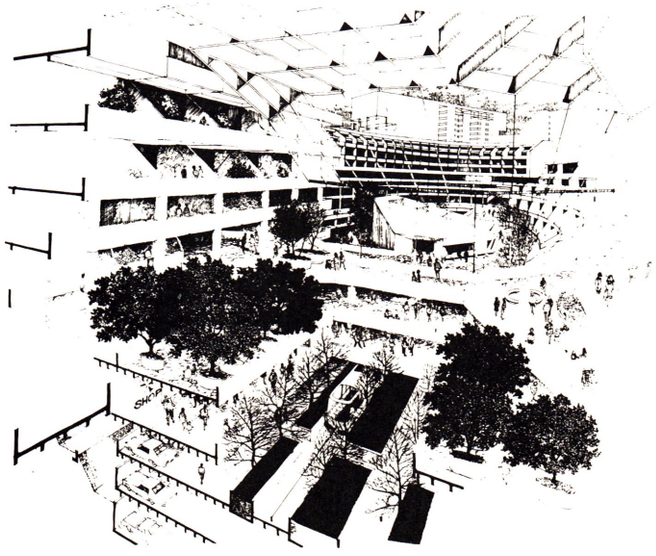


Heublein, Inc. international corporate headquarters at Farmington, Connecticut was designed by Russell Gibson vonDohlen. The building is terraced down a hillside site with each floor offset 30 feet and with stair towers accenting its low profile. Its entrance drive branches off into four service drives leading to parking levels under each floor providing covered, out-of-sight parking for 130 cars. The three visible roofs are fully landscaped using water, fountains, a variety of ground covers and low plantings and a few specimen trees in planters. The exterior walls are precast and poured-in-place concrete.

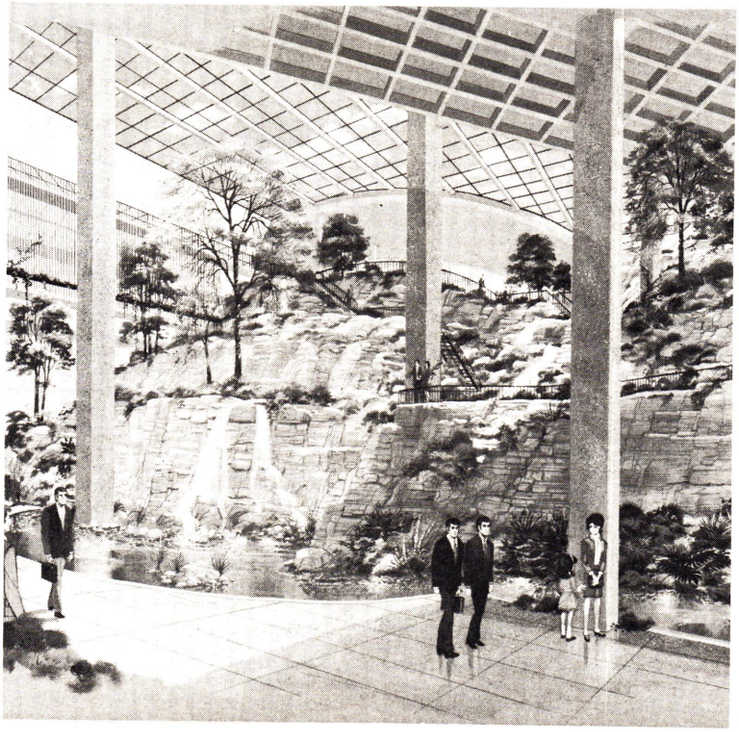


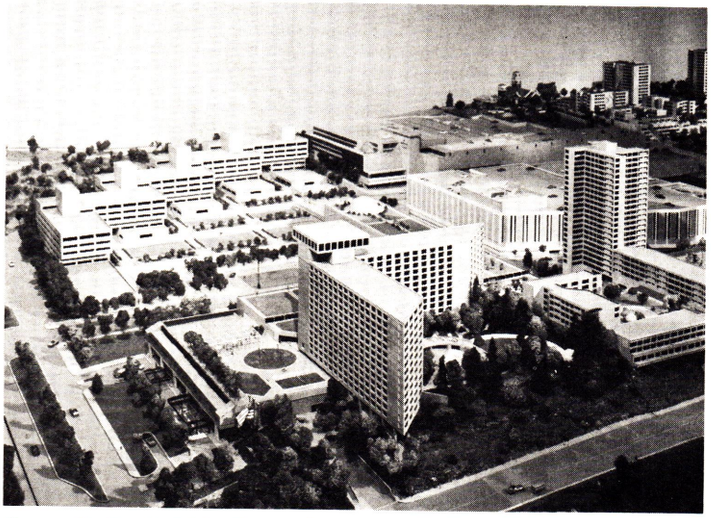


The Daido Life Insurance Company building in Suita City near Osaka by Takenaka will have a 165-square-foot ground floor, 56 feet high, containing a multi-level botanical garden on concrete decks around the elevator and service core. There will be 2300 trees, a promenade and terrace tea house. The architect is recruiting at the local gardening high school for gardeners. Offices will occupy the third to 15th floors.



New Franconia, a new town near Washington, D.C., (William R. Jenkins, architect; Omniplan Corp., urban designers) will provide homes for 39,000 and jobs for 25,000. 80 per cent of the residents will be within 800 feet of a toll-and-pollution free people mover which connects with the Washington Metro. The town center, visualized at the left, will be within eight minutes from any community station. The plan frees 55 per cent of the over 1800 acres for open space.





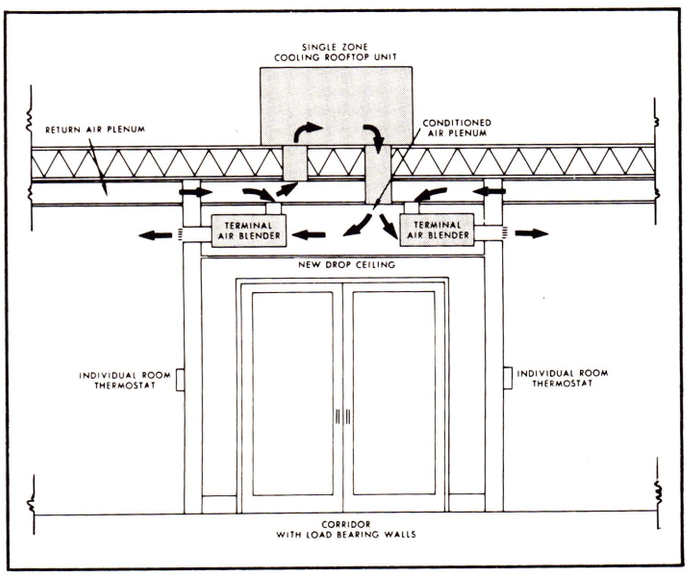
Crown Center Hotel in Kansas City by Harry Weese, with Marshall & Brown, associate architects, will have 730 rooms reached by elevators with panoramic views—and a lobby, meeting and administrative wing built into the side of a 70-foot limestone hill. This hill—with recirculated waterfalls, a stairway zigzagging through tropical plants, past tropical birds and over a stream with exotic fish—will be a backdrop to the lobby. It was designed by Landscape Associates, Inc. The trapezoidal guest rooms overlook a pool terrace and hilltop garden.

Simple, low cost solution to the problem of air conditioning existing buildings

The new Trane Terminal Air Blender System.

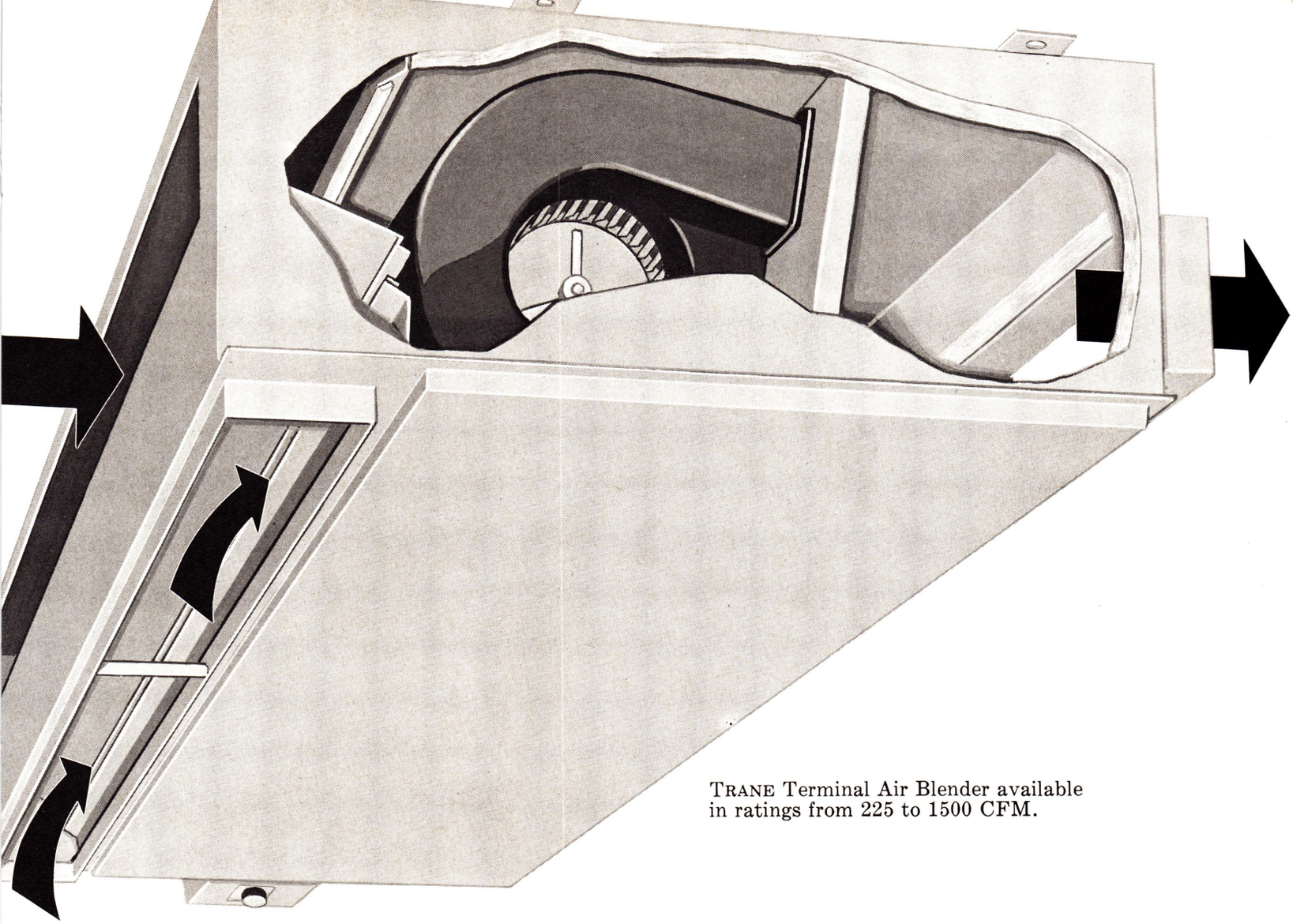
TRANE'S new Terminal Air Blender System solves the problem of how to add quality air conditioning at low cost to existing buildings. It typically offers the lowest first cost, except for individual residential window units, of any other system.

The Terminal Air Blender System provides individual room control comparable to a sophisticated dual duct system, without expensive piping and ductwork. Its unique feature is that it is installed in a corridor with a drop ceiling and uses the space above the new ceiling for the conditioned air. A single zone rooftop air conditioner is usually the most convenient and economical source of cooling, although TRANE can provide whatever cooling equipment is most applicable for a particular building.



The system.

The Terminal Air Blender draws cold conditioned air from the space above the drop ceiling, and mixes this with warmer return air from the room. It then discharges the mixture at the right temperature to achieve the room conditions required by the individual room thermostat. The system can be used with any existing heating systems.



TRANE Terminal Air Blender available in ratings from 225 to 1500 CFM.

Low first cost.

The space provided by the corridor drop ceiling—which is often included in renovation plans—eliminates the need for the long runs of sheet metal ductwork or plumbing (chilled water piping and condensate drains) usually required for individual room units. And if a rooftop cooling unit is used, a separate equipment room is not required. These features lead to significant cost savings in remodeling projects.

Low maintenance costs.

Maintenance costs are minimal because there are no filters to clean in the individual units—conditioned air is filtered at the source. There are no complex control systems to cause problems, no water pipes to freeze, no valves to replace, no drain pans to clean. And because the Terminal Air Blenders are concealed above the ceiling, tampering or vandalism is not a problem.

Long-term reliability.

The TRANE Terminal Air Blender is designed for institutional duty and constructed of heavy gauge steel, to provide long operating life with excellent day-in, day-out reliability. Another feature of the system is low sound levels due to acoustic insulation and quiet fans.

TRANE...the single source.

This latest addition to the TRANE product line is a further demonstration of the way TRANE provides one-source supply and service for almost any environmental system. TRANE'S nationwide network of local sales offices is staffed by graduate engineers qualified to assist in both application and specification for all types of systems. Expert backup service is just as readily available—in fact, TRANE is ready to meet *all* your air conditioning and heating needs.

For all further information on the new Terminal Air Blender System, call your local TRANE sales office or write: The TRANE Company, La Crosse, Wisconsin 54601.

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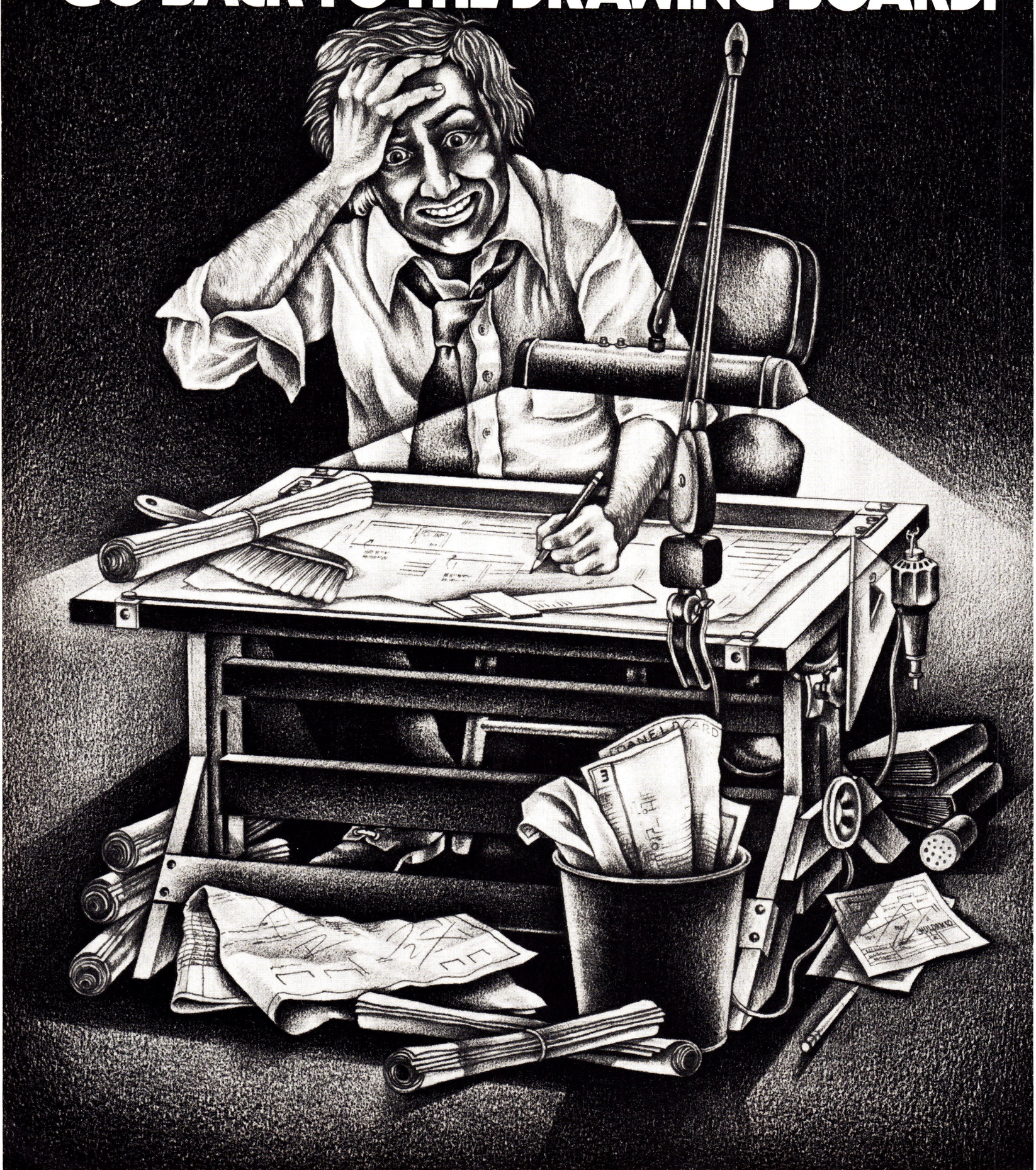

And specify something better.

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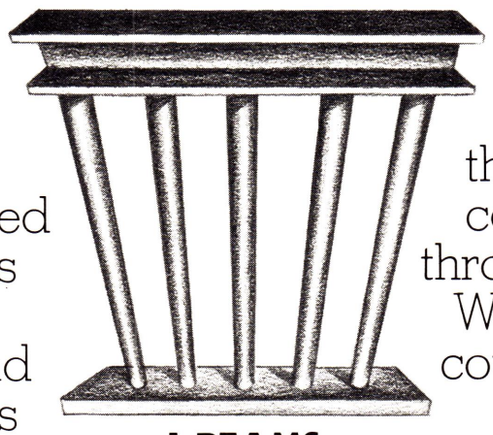
Joist girders. Simple supported joists that carry concentrated loads such as bar joists at top chord panel points and that incorporate a modified Warren truss configuration using hot rolled double angle sections for top and bottom chords and single and double angle sections for web members.



I-BEAMS

Which is harder to explain than I-beams.

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For example, the simple span design of joist girders makes ponding calculations easy.

It speeds design time. It makes larger bay sizes possible. And it reduces the number of foundations and columns required. In a most spectacular way.

So when you go back to the drawing board, you won't end up with writer's cramp.

Then, after the drawing and shouting and groundbreaking are over—even greater economy begins to emerge.

Economy from the high strength-to-weight ratio of joist girders.

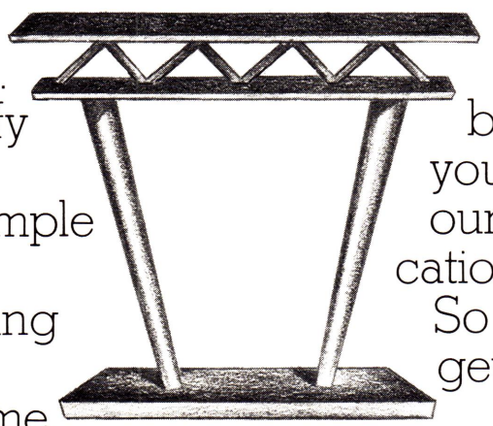
Economy from fast erection of the simple span sections.

Economy from faster bar joist erection. With top chord panel points indicating joist location and making any measurements unnecessary.

Then, to make the trades happy, there's the fact that you can run ducts, conduit and piping through joist girders.

Which even Houdini couldn't do with I-beams.

This could go on forever.



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But you have to get back to the drawing board. And before you do that, you'll need our Joist Girder Specification Guide.

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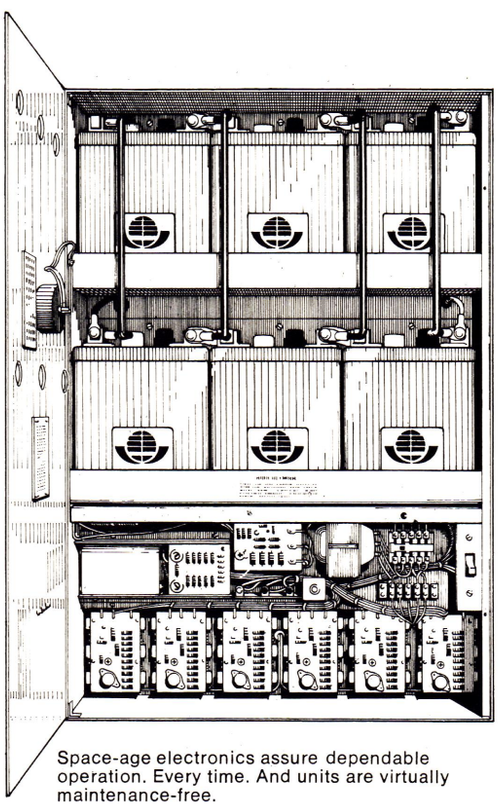
delivers big emergency power.



Space-age electronics assure dependable operation. Every time. And units are virtually maintenance-free.

There was a time when an emergency power installation in your new building could eat up a lot of square feet.

Times have changed.

Now there's a battery-powered AC supply that takes up a little wall space instead of a lot of room space. This means you don't have to allow for a special area to house an emergency power supply. You can put a H.E.L.P. POWER STATION *anywhere*.

Not only is POWER STATION compact, but it's thoroughly reliable. Thanks to solid-state design.

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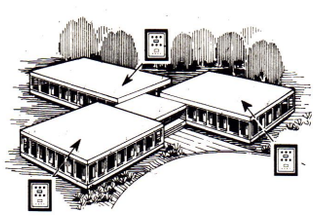
Since POWER STATION does not require extra wiring circuits, you can place individual units wherever they're needed. For example, you can locate a unit in each wing of a building, to keep emergency lights on and alarm systems operable.



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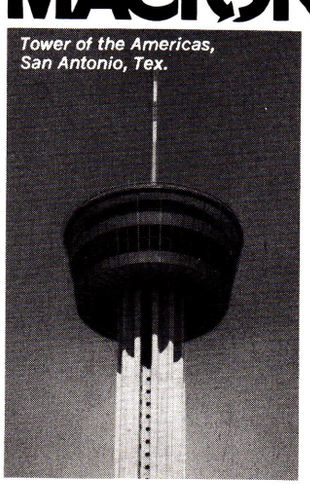
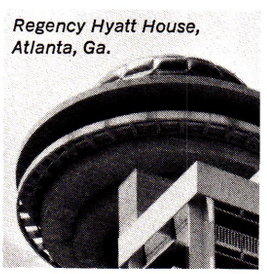


Tower of the Americas, San Antonio, Tex.

Host of Houston, Houston, Tex.

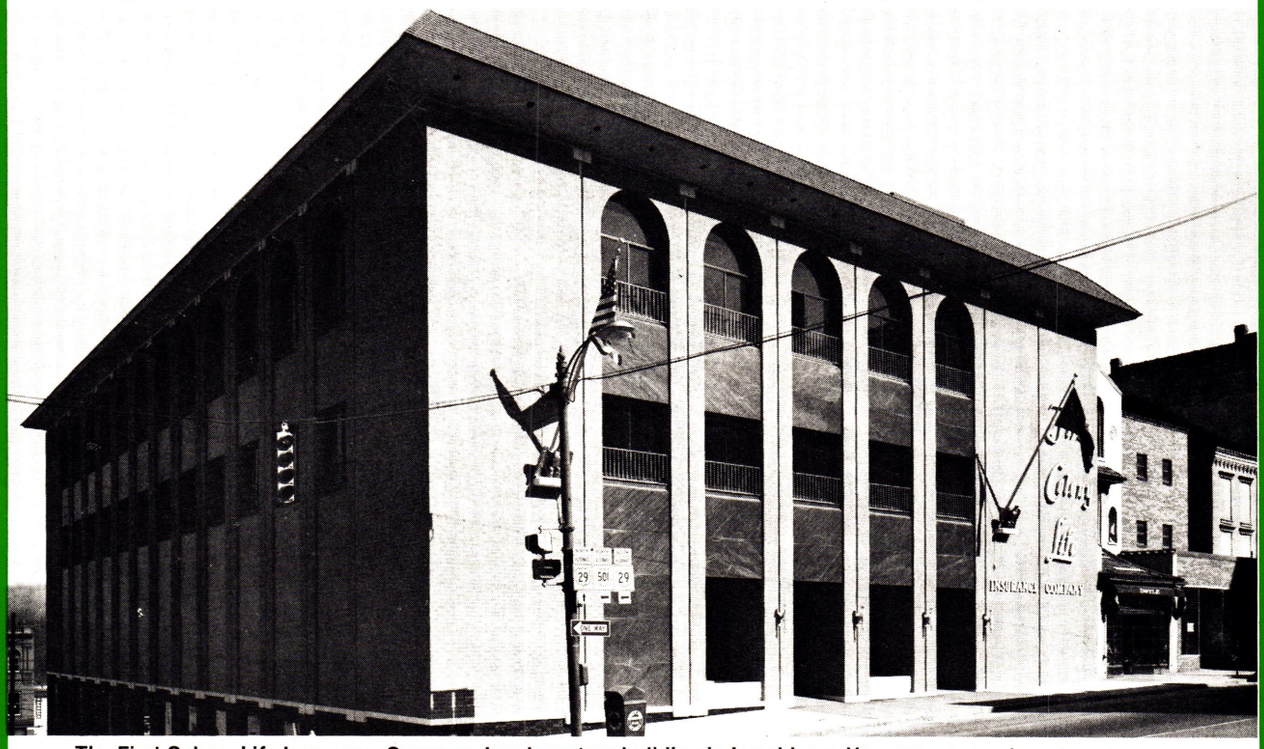


Regency Hyatt House, Atlanta, Ga.

Stouffer's Inn, St. Louis, Mo.

For more data, circle 33 on inquiry card

Building's Modernization Abetted By Electric Heat Recovery System



The First Colony Life Insurance Company headquarters building in Lynchburg, Va., was once a department store.

PROJECT: First Colony Life Insurance Co., Lynchburg, Virginia. ARCHITECTS: Cress-Rhodes & Associates, Lynchburg. CONSULTING ENGINEER: M. Lyman Johnson, Lynchburg.

DESIGN CHARGE: To take a former department store (circa 1927) and transform it into a modern headquarters building for an insurance company with executive and general offices, a data processing center, board room, employee lounges, mail room, print shop, lunch room, mechanical room and storage areas.

DESIGN RESPONSE: In keeping with the company's name (First Colony Life Insurance Co.) and its Virginia ancestry (Lynchburg), architects Cress and Rhodes designed a colonial structure of reddish-orange brick and high arches inspired by the church tower of Jamestown. To achieve the new look, the building was stripped to its frame, leaving just the clay tile wall back-up and concrete floors. The new sand-finished brick laid in Flemish bond was added and the exterior completely redesigned from the Main Street ground floor level upward.

One design objective was to provide a space conditioning system that could benefit from the fact that lighting fixtures are sources of potentially useful heat as well as light. This led to the choice of a heat recovery system. Moreover, it is an all-electric system, which a feasibility study indicated would cost less to own and operate than a comparable system using a flame fuel for heating. The system features an unusual combination of single-duct and double-duct air distribution. The interior spaces, which require cooling during occupied periods in all seasons of the year, receive air from a single-duct system through diffuser-type lighting fixtures. Thermostatically controlled induction boxes above the fixtures regulate interior zone temperatures by proportioning cold primary air with warm air induced from the plenums. A double-duct system incorporating mixing boxes serves the perimeter areas. Cold air for both systems is supplied from a main air handling unit containing water coils piped to a 150-ton chiller and 180 kw of electric strip heaters which are used only when the building is unoccupied in cold weather. A second air handler for the hot deck of the double-duct system provides warm air recovered from the ceiling plenums and supplemented by 100 kw of strip heaters. Electric sill line heating units are installed beneath windows.

SEE REVERSE SIDE FOR DETAIL INFORMATION

1 CATEGORY OF STRUCTURE:
Commercial—Office Building

2 GENERAL DESCRIPTION:
Area: 56,815 sq ft
Volume: 646,700 cu ft
Number of floors: 4½
Number of occupants: 300
Number of rooms: 50
Types of rooms: private and general offices, computer room, board room, mail room, print shop, kitchen, lunch room, lounges, stockroom, storage, mechanical room

3 CONSTRUCTION DETAILS:
Glass: tinted single
Exterior walls: brick and clay tile, wood furring, 4" mineral wool batts (R-13), gypsum board; U-factor: 0.07
Roof and ceilings: built-up roof on concrete deck, 6" mineral wool batts (R-19), suspended ceiling; U-factor: 0.05
Floors: concrete slab
Gross exposed wall area: 18,160 sq ft
Glass area: 2954 sq ft

4 ENVIRONMENTAL DESIGN CONDITIONS:
Heating:
Heat loss Btuh: 1,047,900
Normal degree days: 4153
Ventilation requirements: 7500 cfm
Design conditions: 5F outdoors; 75F indoors
Cooling:
Heat gain Btuh: 1,800,000
Ventilation requirements: 7500 cfm
Design conditions: 95F dbt, 77F wbt outdoors; 78F, 50% rh indoors

5 LIGHTING:
Levels in footcandles: 50-150
Levels in watts/sq ft: 3-6
Type: fluorescent and incandescent

6 HEATING AND COOLING SYSTEM:
The main air handling unit provides cool air to the central spaces during occupied hours yearround through a single-duct system terminating in induction boxes and diffuser-type lighting fixtures. The air handler contains water coils piped into a 150-ton chiller and is equipped with 180 kw of electric strip heaters which are used only during unoccupied times in cold weather. The main air handler also serves the perimeter zones through a double-duct system furnished with thermostatically controlled mixing boxes. A separate air handler supplies the hot deck of this system with warm return air drawn from the ceiling plenums supplemented by 100 kw of strip heaters. Electric sill line heating units are installed beneath the windows.

7 ELECTRICAL SERVICE:
Type: underground
Voltage: 120/208v, 3-phase, 4-wire, wye
Metering: secondary

8 CONNECTED LOADS:

Heating & Cooling (150 tons)	478 kw
Lighting	207 kw
Cooking	11 kw
Water Heating	36 kw
Other	145 kw
TOTAL	877 kw

9 INSTALLED COST:

General Work	$ 635,112	$11.18/sq ft
Elec., Mech., Etc.	427,877	7.53/sq ft
TOTALS	$1,062,989	$18.71/sq ft

Building was completed 9/68

10 HOURS AND METHODS OF OPERATION:
8 a.m. to 6 p.m., five days a week.

11 OPERATING COST:
Period: 12/19/68 to 12/19/69
Actual degree days: 4775
Actual kwh: 1,679,100*
Actual cost: $23,131.54*
Avg. cost per kwh: 1.38 cents*
*For total electrical usage

Billing Date	Degree Days	Demand	kwh	Amount
1/20/69	1068	402	137,100	$ 1,914.53
2/18/69	847	483	135,300	2,071.76
3/20/69	801	456	138,000	2,042.12
4/21/69	383	453	119,100	1,923.14
5/20/69	146	336	111,900	1,644.33
6/19/69		301	146,400	1,954.41
7/21/69		363	161,700	2,099.57
8/20/69		348	153,000	1,995.37
9/19/69	20	336	145,200	1,901.93
10/21/69	148	336	146,400	1,880.95
11/19/69	525	336	126,300	1,724.36
12/19/69	837	366	158,700	1,979.07
TOTALS	4775		1,679,100	$23,131.54

12 FEATURES:
Independent pneumatic thermostats operating in conjunction with the induction and mixing boxes regulate temperatures in the various zones. The system includes an economizer control which shuts down the chiller and permits the use of outside air to supply any cooling needed during occupied periods whenever outdoor temperature is below 55F.

13 REASONS FOR INSTALLING ELECTRIC HEAT:
A feasibility study indicated that the total owning and operating costs of an electric system providing the desired number of independently controlled zones would be less than those for an equivalent system using a flame fuel for heating.

14 PERSONNEL:
Owner: First Colony Life Insurance Company
Architects: Cress-Rhodes & Associates
Consulting Engineer: M. Lyman Johnson
General Contractor: Fred B. Fuqua Co.
Electrical Contractor: Virginia Contracting Co.
Mechanical Contractor: J. H. Cothran Co.
Utility: Appalachian Power Company

15 PREPARED BY:
Herbert M. Figg, Jr., Commercial Sales Representative, Appalachian Power Company

16 VERIFIED BY:
Carl D. Cress, Jr., AIA

M. Lyman Johnson, P.E.

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(actual size)

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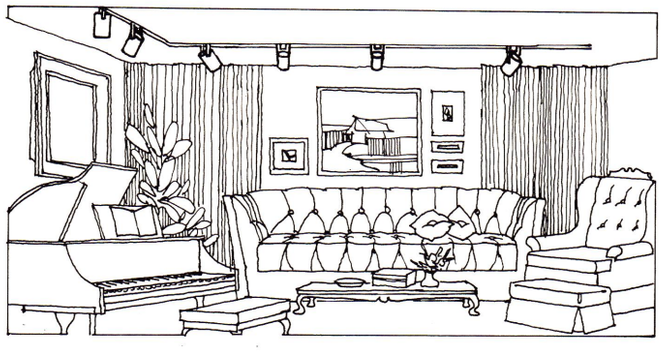
Use their wonderful flexibility wherever you need light for work, play or decorative effect.

Use them to dramatically accent art, sculpture, walls, furnishings.

The single-circuit track for Progress Mini Lights measures an unobtrusive 5/8″ deep. Two-circuit track is only 1-1/8″ deep. Each circuit has 20 amp. capacity. Both tracks come in 4- and 8-foot sections which go up easily on ceilings or walls. Insert Progress Mini Lights easily anywhere



along the track. Swivel them, move them to new positions, switch them on or off individually.

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Capital comments: Brooks bill, Breakthrough and GSA's buy-back

Another big hurdle in the intense effort by architects and engineers to lock into place the traditional system of selecting design professionals for most Federal work was surmounted in July when the House of Representatives passed by voice vote the Brooks bill seeking to amend the Federal Property and Administrative Services Act of 1949.

For years the organization known as the Committee on Procurement of Federal A/E Services has spent considerable time and money on this attempt to codify the common selection system which relies on qualification, not price.

Any complacency that might have surrounded the traditional selection method was shaken five years ago when the Comptroller General of the U. S. issued a report leaning heavily toward favoring price competition (which he said was written into the law as best he could interpret it). At the time he urged Congress to move to clarify legality of the generally accepted procedure.

House action on H. R. 12807 by Rep. Jack Brooks (D-Tex.) leaves only Senate concurrence and a Presidential approval to give the architects and engineers what they have been seeking for so long. That could prove to have a somewhat troublesome course, however, with Congress entering the final hectic days of its second session. There's no similiar bill visible for prompt action on the Senate calendar.

The 91st Congress saw the House pass a similar bill, but that one was a victim of the last-minute rush before adjournment. If the current 92nd doesn't get the measure to the White House, another effort can be expected in the 93rd beginning next January.

In the House debate, Rep. Chet Holifield (D-Calif.), opposed the proposal on grounds the bill represented special interest legislation, designed "for the aid and comfort of certain professional groups." Calling it the result of an intense lobbying effort, he told his colleagues, quoting *Business Week*, that the American Institute of Architects had assessed its members $10 each for a special fund to launch a legislative campaign for the bill or one like it.

Rep. Holifield predicted no similar bill would pass the Senate this year, but staff people for the AIA, the Consulting Engineers Council and the National Society of Professional Engineers are hopeful they can get a measure through before adjournment.

In outlining the purpose of the bill, the House Government Operations Committee report noted that the traditional selection system, based mainly on A/E qualifications and competence, was the most effective manner for acquiring services. It recommended that regular competitive negotiation procedures not be applied to procurement of A/E professional services.

Also entering the House debate was the question of whether the bill should be approved before the Government Procurement Commission made its report at the end of this year. Joining Rep. Holifield in his opposition to approval on grounds the GPC report should be seen first was Rep. Frank Horton (R-N.Y.), along with Holifield a member of the procurement commission studying A/E selection as well as other forms of government purchase practice.

In passing H.R. 12807 the House accepted committee amendments which provide two safeguards:

- That there be public announcement of all requirements for A/E services. This aims at attaining a high level of competition in the award of procurement contracts.
- That discussions take place with no less than three firms on anticipated concepts and alternative methods at a stage in negotiations that will not require actual design work. As the bill was originally written, it might have put the firm under consideration to considerable expense in developing plans.

It was noted that enactment of the proposed law would legalize a selection system now in use for more than 30 years and would mean no additional cost to the government.

Defeated were amendments which would have included the Defense Department (now under separate military procurement regulations) and which sought to require agency heads to solicit design proposals including life-cycle costs and qualifications. The latter, had it been approved in a final law, could have led to the possibility of requiring environmental impact statements and similar considerations on each project, a prospect supporters wanted to avoid.

There has been some speculation about the effect of the recent consent decree agreement of AIA and ASCE with the Justice Department on the effectiveness of such legislation as the Brooks bill. Some would hold that to quote prices for architectural and engineering services on Federal projects is the same as bidding. Therefore, the purpose of the Brooks bill would be automatically circumvented.

The fact is that the two actions, that is the Brooks bill and the consent decree, are in entirely separate parts of the forest. The Brooks bill merely clarifies law so that the General Accounting Office can accept A/E selection processes already in effect. The consent decree merely agrees to sufficient changes in the written ethical standards of the professional associations to remove prohibition against any pre-commission price quotation at all. Approaches to argument for or against the Brooks bill are unaffected by the consent decree because they are an entirely separate consideration.

Probably one of the more serious constraints on actual passage of the Brooks bill through the current session of the Senate resides in a "wait and see" attitude pending the scheduled December publication of an already overdue report from the Government Procurement Commission which is expected to deal with procedures for A/E services. This, and the intervening pressures of the Republican national convention and the backlog of other pressing legislation to be considered before adjournment, leaves small hope for action on the Brooks bill or any similar legislation in the Senate before adjournment.

Operation Breakthrough reviewed in housing goals report

The fourth annual report on national housing goals reviews the accomplishment of HUD's Operation Breakthrough, the volume housing and demonstration program, emphasizing that efforts will continue to make broader use of the guide criteria developed for this program by the National Bureau of Standards.

These performance criteria by which

the OB product will be judged have caused continuing consternation in the construction industry because of the Department's apparent determination to work their provisions into other standards. Latest reports from industry sources say FHA's minimum property standards are now being changed to reflect some of the Bureau's work.

The new report points out that problems of building codes and restrictive code administration practices have impeded innovation. As one solution, it states, 20 states have enacted statewide industrialized building laws or mandatory general purpose building codes, reasserting state authority in the code area and stipulating that housing approved by the state must be accepted everywhere in the state. No such laws existed prior to OB.

Since mid-February, OB and the National Conference of States on Building Codes and Standards have been developing a new model statewide industrialized housing law for consideration by the 30 states now without such legislation.

As for the OB performance criteria that NBS developed with review by the National Academy of Sciences, the goals document terms these "an effective bench-mark for design and evaluation" of housing innovations. It states: "A continuing review and improvement of these criteria are being maintained, with comments and participation by various elements of the housing industry. Of equal importance is the stress placed upon quality assurance in the manufacture and erection of the industrialized housing product."

Leadership in the application of improved management systems in the housing industry is also claimed for Operation Breakthrough.

On 1972 housing volume, the report says new starts and subsidized rehabilitations could again, as in 1971, reach around 2.1 million units with mobile homes accounting for another 500,000. Subsidized housing could push total output to 2.8 million units if present subsidy programs generate a sufficient number of quality units in suitable environments.

It confirmed that progress toward the national goal of 26 million units in 10 years (set in 1968 housing act) is well ahead of the production path outlined just two years ago and said the fiscal year 1972 goal of 2,330,000 units, including starts, mobile homes, and substantial rehabilitations, is expected to be exceeded by some 500,000 units. On a cumulative basis, HUD estimates that production for the first four years is eight per cent ahead of the goal path as it was revised in 1970.

Discussing production progress and the 10-year goal, the report says the economy has the productive capacity to meet or even exceed the target. As a result of exceptionally strong unsubsidized work during the fiscal period, such construction is estimated to be 117 per cent of the target at this point —end of the decade's first four years.

On the money front, HUD's report said the supply of funds this year from identifiable lenders was projected to meet 91 per cent of the demand for one to four family loans and 95 per cent for multi-family loans, about the same as in 1971. The ratios compared with 88 per cent for one to four family home loans and 94 per cent for multi-family in 1970 when mortgage credit was tighter.

Minor unidentified sources would provide the remaining funds sufficient to support the projected production levels of 1972 and 1973. But the cost of borrowing continues to be the single most important component of total housing cost in both owner-occupied and rental units. Interest rates are not likely to decline soon.

HUD takes the view there is little to be gained by arguing the methodology by which the goal figure was reached. It comments: "Until detailed data from the 1970 census become available, there is little point in taking sides in the debate over the validity of the original goal. When such data are available and analyzed, a clearer picture should emerge as to general housing conditions and the changes which have occurred in the housing stock."

As did last year's report, the current document deals with the high cost of subsidized housing. Program obligations can only be estimated now because income levels and operating costs 30 to 40 years into the future are factors. But HUD says the Federal Government already is committed to about $12 billion in future subsidy payments for 235 and 236 programs alone based on units approved as of July 1. The maximum payments legally permissible, it says, could reach $36 billion.

Purchase-contract agreements: GSA's new Turnkey deal

GSA's Public Buildings Service now has issued purchase contract documents—the first—covering operating details of its new approach to constructing Federal buildings.

These follow enactment of the public buildings law amendments which give the agency new authority to go the purchase-contract route in moving forward a building program that has been lagging in recent years because of the delays involved in Congressional appropriation of necessary funds. The new law permits construction without federal money (financing to come from the private sector) with the government arranging for later ownership through a lease process which could run up to 30 years.

PBS moved quickly to implement its new authority, putting 20 projects on the market, asking for bids within various time periods for submission, depending upon the size of the project. These were placed under what the agency calls the dual system with separate contracts to finance and construct. It is surveying about half of these, however, to see if they should be moved over under the other system which covers a single contract to finance, construct and sell, and will be used for the larger jobs.

There are more than 60 approved projects which PBS will run through in the months ahead under the new authority; but for now solicitations are sought only for those on which designs and specifications have been completed. The plans and specs of the others will be revised and updated.

While the documents were issued as a basis for starting the program, it was learned that GSA is planning comprehensive revisions in the dual system guides which explain that several projects are grouped to secure a single contract to finance and sell for the entire group but that individual contracts will be let for construction. Financing is required to cover construction costs, A/E services costs, taxes (where applicable during construction) and other specified items.

GSA plans to award the finance-sell contract to the responsible bidder offering the lowest interest rate. Rates of eight to nine per cent are talked of, but some observers expect the final figures to run above that range.

Only minor revisions are contemplated for the package system document, say GSA spokesmen. Construction will be on government-owned sites leased to the contractor who agrees to finance, construct and sell the building and improvements to the government.

Where the package approach is used, bids are to include a purchase price and an interest rate with award to the lowest responsible bidder on an annual payment basis.

While many architects and contractors have some reservations concerning certain aspects of each document, on the whole they appear willing, some eager, to go along with the experiment. AIA spokesmen, for example, say they'd prefer to see GSA in charge of selecting A/E's rather than the entrepreneur, as now indicated. The Associated General Contractors said many of its members expressed concern over full payment for services under terms of the initial documents.

If an investor should pull out after partial completion of a structure, the contractors say, there might be a chance the builder would get stuck for his own investment up to that point. But these details are being worked out with the agency as it revises these early documents.

The building projects now in the stream for construction under one of the two methods have been approved but not funded by Congress. Over a year ago, GSA began asking for the purchase contract authority with which it could break into the big backlog of needed office space that had been designed but not constructed.

The bill was finally passed and was signed recently by the President.

Largest building in the list of 61 shown in the PBS program document is a 1,136,000-square-foot concrete Federal office building for Detroit.—*Ernest Mickel*

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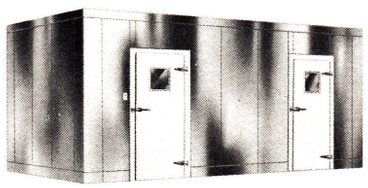
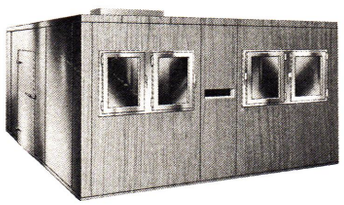


Notre Dame, Ind.

University of Notre Dame Athletic and Convocation Center
20′x10′ Combination Cooler/Freezer
Architect: Ellerbe Architects, St. Paul, Minn.
Dealer: Aslesen, Minneapolis, Minn.

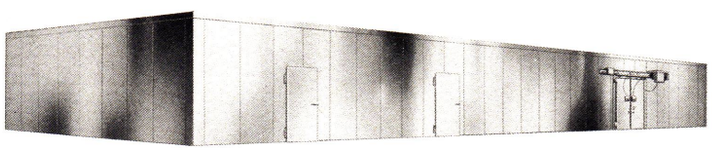
Washington, D.C.

Andrews Air Force Base
96′x36′x10′ Refrigerated Warehouse
Architect: Vollrath Refrigeration Inc., River Falls, Wis.
Dealer: Alto Inc., Alexandria, Va.



Los Angeles, Calif.

Straw Hat Pizza Palaces
12′x14′x8′4″ Reach-In Cooler
Architect: Design Services Inc., Menlo Park, Calif.
Dealer: Design Services Inc., Menlo Park, Calif.



Clearwater, Fla.

Pinellas County School Board
24′x98′x10′7″ Commodity Storage Cooler
Architect: R. D. Bateman Co., Tampa, Fla.
Dealer: R. D. Bateman Co., Tampa, Fla.

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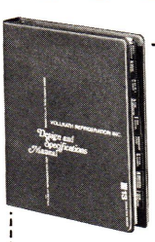

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REINFORCED CONCRETE: COMPELLING IT IS.

American National Bank Building, Amarillo, Texas
Architects: Kelly/Marshall & Associates, Inc., Tulsa
Structural Engineers: The Engineers Collaborative Ltd., Chicago
Contractor: WRG Construction, Tulsa

COSTLY IT ISN'T.

Amarillo reaches for the sky.

Striking design soars for 31 stories in the American National Bank Building. The tallest structure in Amarillo. And the architect's choice for this highly effective, yet highly practical, treatment was reinforced concrete joist floors: lightweight aggregate plus Grade 60 reinforcing steel.

Design freedom. And a tight rein on costs.

The lack of high soil bearing capacity for the substructure didn't limit expressive use of space and shape in this structure. Piers drilled into the site's silt and clay use friction forces and end bearing. The choice of lightweight concrete joist floors resulted in the lowest possible weight for the span lengths and meets the fire rating requirements without relying on fire resistive ceilings. Concrete columns of 4,250 psi and 6,000 psi strength were used. The joist floors were all structural lightweight concrete of 4,250 psi strength. All together, more than 2,000 tons of reinforcing steel (7.2 psf) went into the job. And when the final structural costs were tallied up, $11 per square foot was the very respectable figure for the building's 557,000 square feet, complete except for partitions, floor coverings and ceilings in tenant spaces.

Standing up to a Texas-style wind.

An unusually high wind load requirement of 40 pounds per square foot faced the designers. Another good reason for their choice of reinforced concrete. They combined both functional strength and eye-appealing contour in the shear wall and frame seen on the building's narrow dimensions. The second through sixth floors were designed for garage parking for bank customers and tenants. Here again, the versatility of reinforced concrete permitted supporting the shear-wall loads on a seven-story-high rigid frame. Result: a garage with six sloping ramp floors for unencumbered parking space.

Beating the clock is an economy move.

Time and again, the speed of construction with cast-in-place reinforced concrete and the immediate availability of rebars show how to stretch the building dollar. The American National Bank Building is no exception. No particular construction problems cropped up. The 21-month construction schedule was met easily. Helping all the way were Grade 60 rebars, used in straight, cut lengths. Standard steel pan forms for joists, with wide band beams of the same depth, gave a flat soffit unobstructed by beams. No truss bars were used. And all rebars were bundled and shipped as needed for easy placement.

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Reinforced concrete: compelling, not costly.

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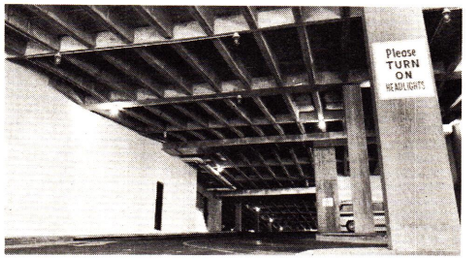

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CURRENT TRENDS IN CONSTRUCTION

James E. Carlson
Manager, Economic Research
McGraw-Hill Information Systems Company

The migration effect on regional building profile

In a period characterized by demographic uncertainties like declining birth rates, and vacillating rates of household and family formations, it is reassuring to note that one aspect of our population profile is as predictable as the final scene of an old Lone Ranger serial: Every year, nearly one person in five changes his place of residence. It is also pretty certain that a large majority of these moves will be for only short distances. Of those people who went through the packing and unpacking rites last year, for instance, almost two-thirds remained in the some county, and half of the remainder moved to another county, but stayed in the same state.

Mobility figures also yield fairly standard patterns with respect to age and employment status. Last year's median age for those that moved to a new residence was 23, for instance, while the median age for nonmovers was 32. And these figures are pretty much representative of most of the last decade. Also, unemployed persons tend to move more frequently in proportion to their counterparts who are gainfully employed; a statement that will also hold true for the entire period of the sixties as well.

There tend to be distinct differences, though, between people that move *within* the same county, and those that move to a different county, or beyond. The Census Bureau even affixes a different name, "migrants," to those who cross county lines. The name is appropriate, because, like most "migrations" in the past, these long distance moves are made primarily for economic reasons—a new job, or job seeking—not so much to improve housing conditions or social surroundings. And, like the economic rationale that governs them, their size and direction are less determinate.

Looking at the working age males in this migrant group, a larger proportion are white-collar workers than is true of the population spectrum generally, and a larger proportion have a median income below $7,000. This lower median income is explained by the fact that the age differential found to exist between movers and nonmovers generally, is also present among working age males of the two groups. And since younger men typically earn less than older men the difference would be reflected in the migration income data. Also the extremely low wages of many blue collar workers in the migrant group would pull the average down.

It seems reasonable to assume that the longer the move, the more significant a role economic considerations will have in it. Let's look at the pattern of interregional moves over the past several years, and see if the play of economic forces can be sorted out in any consistent manner.

West and South are main goals of migration

Since 1955, the West has a net gain of more than five million people through migration. For a sense of the magnitude of this gain, imagine a metropolitan area the size of greater Philadelphia transported out of the 37 eastern states and scattered about in those states west of the Rockies.

The prime lure of the West over this period, of course, was the burgeoning aerospace industry, and the jobs it offered to white collar workers in the engineering and electronics fields. But, aero-space can prove to be a fickle benefactor, particularly since so large a portion of it is based on Federal funding. A serious drop in the West's migration rate from the 500,000 a year figure of the early sixties, to a 150,000 rate in 1964 and 1965, along with all the accompanying economic disruptions, can be directly linked to a series of cutbacks in defense purchases, and military base closings in 1963 and 1964. Migration to the region picked up again in the late sixties as the fortunes of the aerospace industry improved somewhat, but slowed again during the recent recession, never regaining the peak levels of the first part of the decade.

Unlike the West, migration patterns in the Midwestern region are more directly linked to general economic activity than they are to any given industry. This region has been the biggest net loser of population over the recent past—some two and a quarter million people have left for other areas since 1955—due largely to the long term trend toward decentralization in the nation's industrial base. The sharpest outflows of people have coincided roughly with the last three periods of general economic recession, however. People left the region at a rate of 300,000 a year during the 1957-58 downturn, again in the 1960-61 period, and during the most recent drop, in 1970. Conversely, during the boom years of the late sixties, the outflow trickled to an average of less than 7,000 a year.

The Northeast and the South appear to be riding long term migration trends that are in direct opposition to one another, with the Northeast netting increasingly larger figures in the loss column.

In the period from 1956 to 1960, the Northeast lost an average of 18,000 people a year through migration. This loss grew to a 77,000 per year average in the 1961-1965 period, and then to a 119,000 yearly average between 1966 and 1970. The loss in 1971 was 195,000. Like the Midwest, the Northeast is suffering from a long term trend toward decentralization, as both the financial and service industries and the home offices of many major industries seek other regions of the country in which to expand or relocate their operating centers.

The South, on the other hand, appears to have been a prime beneficiary of the Northeast's deepening pattern of migration losses recently. It netted back-to-back migration gains of 50,000 and 250,000 in the past two years. The surge of retirees into the region, a common explanation for the South's migration gains, appears to play only a small role in the final outcome. A full 50 per cent of the region's gains last year were in the 35 to 64 age group, while retirees accounted for only 13 per cent of its newcomers. Conversely, only 12 per cent of the Northeast's losses last year were attributable to the group aged 65 and over. So the move south was primarily to jobs.

Although the data are not yet available to show it, the migration declines in the Midwest should be easing off now that the economy is well along on the road to full recovery from the 1970 recession. Similarly, a recent upturn in aerospace contracts combined with the trend toward a more diversified economic base will keep the West on the plus side of the migration ledger for the foreseeable future. The South should continue to attract white collar migrants at the expense of the Northeast. But this will not necessarily show up as a consistent net gain in migration, because, despite the South's recent economic strides, there still exists a sizeable flow of black Southerners into the cities of the Northeast and Midwest.

The bearing that these migration trends have on construction will be the topic of a future article.

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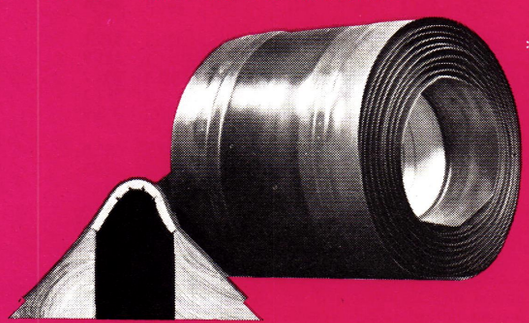

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HOPE FOR LESS INFLATION?

One of the ill winds that may be having salutary second effects in slowing down the inflation spiral has been a seeming cutback in the number of contracts for new, non-residential, architect/engineer designed projects during June, according to Dodge Reports. This decline, however, was more apparent, by contrast with unusually high May figures, than real, in the light of a 10 per cent overall gain in the Dodge Architectural Construction Index for the whole first quarter of 1972.

At the same time, but not necessarily related, the Labor Department announced a decline in union labor negotiations, contract durations, and the rate of negotiated wage increases. First-year negotiated wage increases dropped from 13.3 per cent last year to 8 per cent for construction compared to an all-industry drop from 11.7 per cent to 7.5 per cent.

On the other hand, early July hearings on the occupational safety and health program of the Labor Department and its effects on small business drew from an Associated General Contractors witness (William E. Naumann) the estimate that OSHA rules and regulations could boost the cost of construction by 10 to 35 per cent. There may be some relief in an amendment attached to the HEW appropriations bill—vetoed but still alive—that would limit inspections and detailed records to construction locations employing more than 15 persons.

1941 average for each city = 100.00 (except as noted)

September 1972

Metropolitan area	Cost differential	Current Indexes non-res.	residential	masonry	steel	% change last 12 months
U.S. Average	8.3	378.3	354.4	369.6	360.3	+ 7.63
Atlanta	7.8	480.8	453.4	467.9	457.7	+ 6.29
Baltimore	7.9	397.3	373.6	386.3	376.1	+ 7.82
Birmingham	7.3	347.4	323.2	335.2	330.5	+ 8.45
Boston	9.0	384.8	363.6	381.2	370.1	+ 11.45
Buffalo	9.1	421.6	396.1	416.5	402.7	+ 9.69
Chicago	8.4	431.3	410.2	417.1	410.0	+ 8.23
Cincinnati	8.7	407.7	383.7	396.7	386.9	+ 7.57
Cleveland	9.3	423.6	398.7	413.9	404.0	+ 6.24
Columbus, Oh.	8.3	402.9	378.4	391.0	383.6	+ 6.40
Dallas	7.6	370.7	359.1	363.6	356.7	+ 7.06
Denver	8.1	405.3	381.4	400.6	386.8	+ 5.78
Detroit	9.5	424.1	404.1	423.6	407.8	+ 8.52
Houston	7.6	361.0	339.1	352.6	345.8	+ 5.42
Indianapolis	8.0	356.6	335.0	347.8	340.1	+ 7.43
Kansas City	8.1	355.7	336.3	346.0	338.9	+ 6.01
Los Angeles	8.2	419.4	383.5	407.7	399.5	+ 9.10
Louisville	7.7	376.4	353.6	368.7	360.3	+ 8.58
Memphis	7.7	360.6	338.7	348.7	342.8	+ 7.15
Miami	8.0	398.8	380.0	389.2	380.7	+ 6.87
Milwaukee	8.5	431.2	405.0	425.9	412.3	+ 6.25
Minneapolis	8.9	408.7	384.6	402.5	390.6	+ 9.90
Newark	8.9	376.7	353.9	371.4	362.3	+ 7.13
New Orleans	7.3	358.0	338.0	352.4	344.6	+ 7.23
New York	10.0	418.5	389.2	405.6	395.5	+ 7.44
Philadelphia	8.7	401.1	382.2	394.1	384.8	+ 10.76
Phoenix	7.9	216.4	203.3	208.9	205.5	+ 10.06
Pittsburgh	8.8	371.1	349.2	364.3	353.8	+ 7.98
St. Louis	8.7	393.1	370.1	388.1	376.1	+ 7.28
San Antonio	7.6	146.9	138.1	143.5	140.1	+ 1.97
San Diego	8.0	151.7	142.6	148.7	145.3	+ 7.48
San Francisco	9.3	549.8	502.7	546.2	528.1	+ 11.49
Seattle	8.6	375.0	335.8	371.5	357.4	+ 4.85
Washington, D.C.	7.8	358.1	335.5	346.5	339.0	+ 7.98

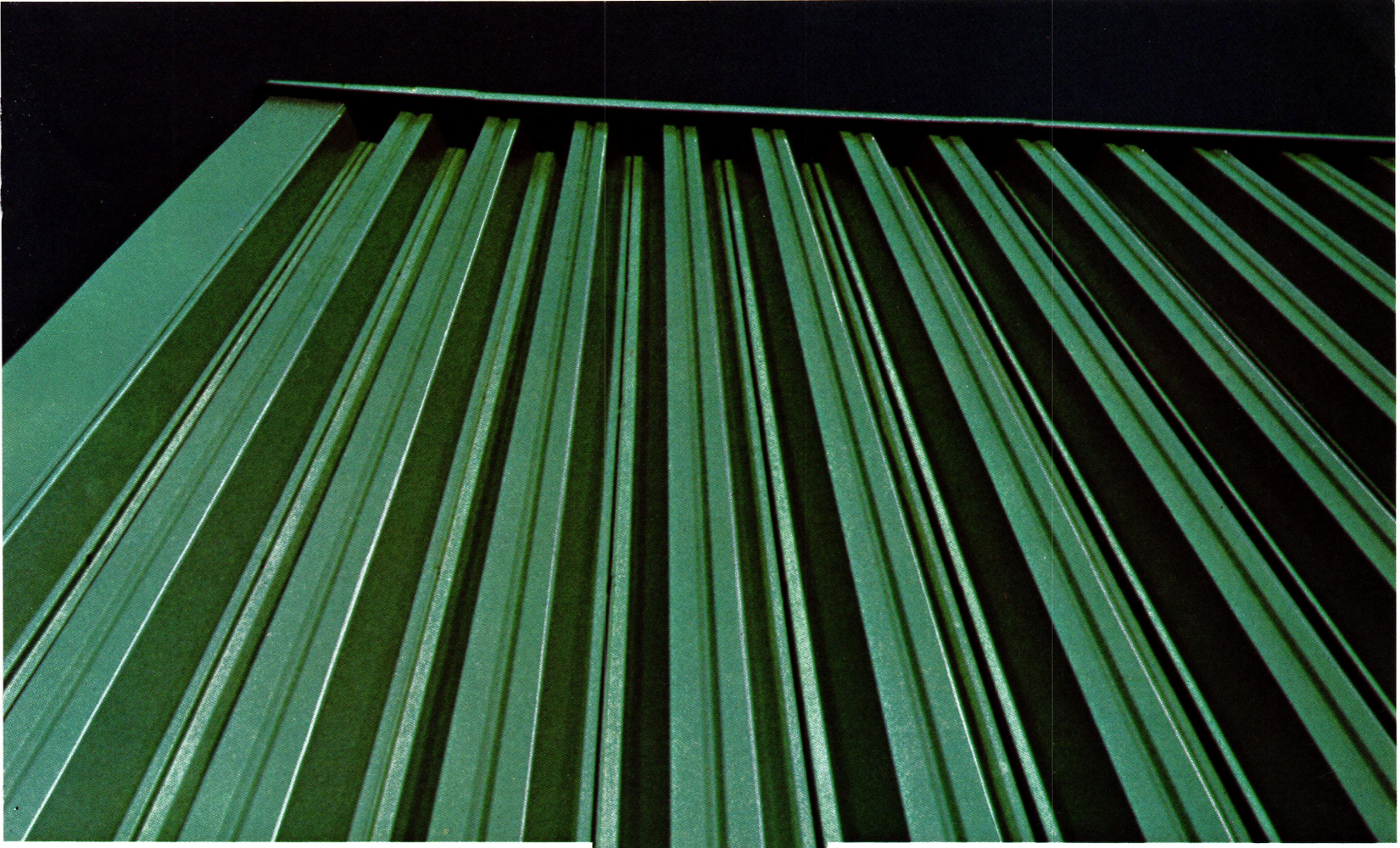
Cost differentials compare current local costs, not indexes.

HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

Metropolitan area	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971 (Quarterly) 1st	2nd	3rd	4th	1972 (Quarterly) 1st	2nd	3rd	4th
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	384.0	422.4	424.0	445.1	447.2	459.2	472.5	473.7		
Baltimore	271.8	275.5	280.6	285.7	280.9	295.8	308.7	322.8	348.8	350.3	360.5	362.5	381.7	388.1	389.3		
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	303.4	309.3	310.6	314.6	316.4	331.6	340.4	341.6		
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	295.0	328.6	330.0	338.9	341.0	362.0	377.3	378.5		
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	356.1	386.1	387.7	391.0	393.2	418.8	422.8	424.0		
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	325.8	348.5	350.0	372.3	374.3	386.1	399.9	401.1		
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	358.3	380.1	381.6	391.1	393.5	415.6	415.2	416.4		
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	308.6	327.1	328.6	341.4	343.4	357.9	364.9	366.1		
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	339.0	368.1	369.7	377.1	379.1	392.9	398.3	399.5		
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	352.9	377.4	379.0	384.6	386.8	409.7	416.9	418.1		
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	295.5	315.3	316.6	329.5	331.5	344.7	348.7	349.9		
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	344.1	361.9	363.4	374.2	376.4	400.9	407.8	409.0		
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	392.3	353.2	354.7	366.8	368.9	384.7	391.5	392.7		
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	331.2	361.1	362.7	366.0	368.0	417.1	401.7	402.9		
New Orleans	245.1	284.3	240.9	256.3	259.8	267.6	274.2	297.5	318.9	320.4	327.9	329.8	341.8	350.9	352.1		
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	344.5	366.0	367.7	378.9	381.0	395.6	406.5	407.7		
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	321.0	346.5	348.0	356.4	358.4	374.9	394.2	395.4		
Pittsburgh	251.8	258.2	263.8	267.0	271.1	275.0	293.8	311.0	327.2	328.7	338.1	340.1	362.1	364.5	365.7		
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	324.7	344.4	345.9	360.0	361.9	375.5	385.5	386.7		
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	441.1	465.1	466.8	480.7	482.6	512.3	535.3	536.5		
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	317.8	341.8	343.3	347.1	349.0	358.4	363.0	364.5		

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 ÷ 200.0 = 75%) or they are 25% lower in the second period.



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Dramatic new dimensions in metal building design. Uncommon strength permits long-span erection—20 feet and even more . . . Plus your choice of shapes with shadow-casting deep valleys . . . Amplifies the beauty of your building. It cannot hide in the sun or the hazy distance.

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Call or write today for brochure, "BINKLEY WALL SYSTEMS" or to have a Binkley Sales Engineer call. **THE BINKLEY COMPANY, Building Products Division, 331 Thornton Avenue, St. Louis, Missouri 63119, phone 314-968-4750.**

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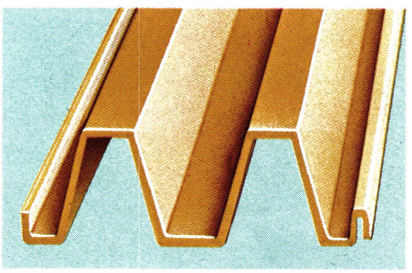
BBR—SPANMASTER PANELS—The NEW shape for towering buildings. Full 4 inches deep and 12 inches wide for long-span erection. Whether used as single skin or as face panels for insulated walls, Spanmaster basks in unmarred beauty when erected with concealed fasteners.



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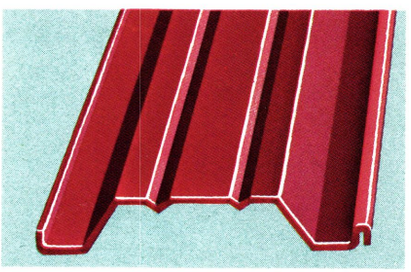

ABCF—MAJESTIC—The shape of buildings to come. A husky, 12-inch wide, 2-inch deep intermediate long-span Binkley original.

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An Air-Flyte Engineer can help you design a first-class air transport system that flies refuse or clean materials or both, from any place in a building to another. Air-Flyte travels anywhere you want. Up. Down. Along walls. Under floors. On ceilings. For long distances. Even from building to building. Which gives you a lot of design flexibility and keeps a low ceiling on operating costs, manpower, space requirements and gives you and your clients much better environmental control.

As the inventors, designers and largest manufacturer of pneumatic waste collection systems, we are the world's most experienced air line in transporting refuse and clean materials. What we've learned in helping other architects, could be helpful to you, too. Why don't you bring in an Air-Flyte Engineer for a briefing? See our catalog in Sweet's . . . write or call us.

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The art of purchasing persuasion is beautifully demonstrated at Perimeter Mall — the completely modern array of general stores and boutiques in suburban Atlanta, Georgia. Everything is designed to concentrate shoppers' attention on shopping. Haughton escalators fit this purpose, ideally.

Smart Haughton escalator styling blends with the intimate entrance rotunda. And Haughton's new silent treatment quiets virtually all sound. Customer confidence is further ensured by Haughton safety features that exceed even the escalator industry's strict standards.

Of course, special durability, smooth performance and high traffic capacity are well-established for Haughton escalators. Low initial and maintenance costs, space economy and adaptability are benefits of our self-contained design. All this makes Haughton escalators practical and reliable for stores, shopping malls, transportation terminals, theaters, arenas, school and office buildings.

Custom flexibility, plus "package" promptness and price are advantages of single-source Haughton design, engineering, manufacture, installation and maintenance. Investigate. Call the Haughton branch listed in your Yellow Pages — or write us.

HAUGHTON ELEVATORS AND ESCALATORS

Toledo, Ohio 43601

DIVISION OF **RELIANCE** ELECTRIC COMPANY

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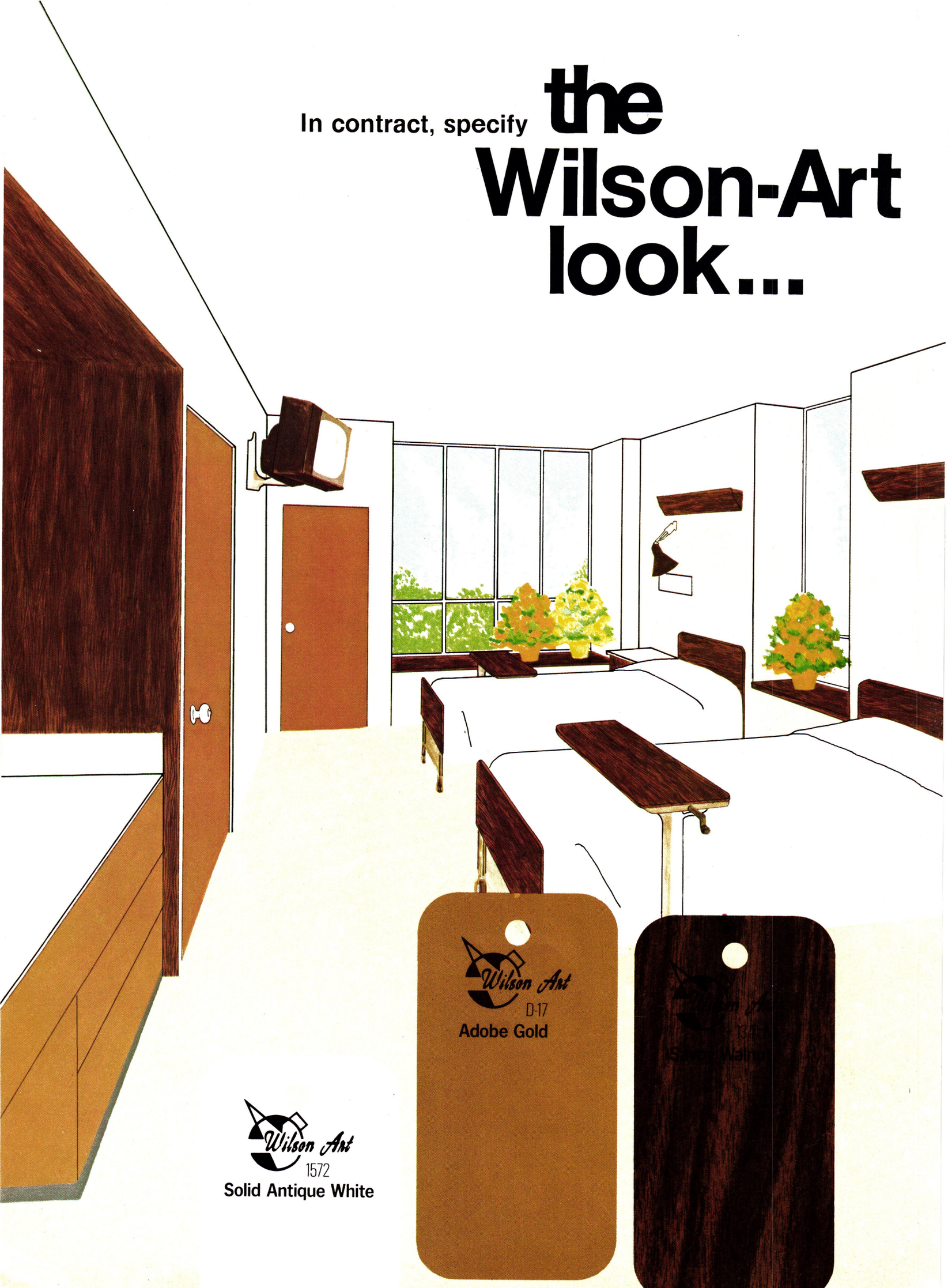
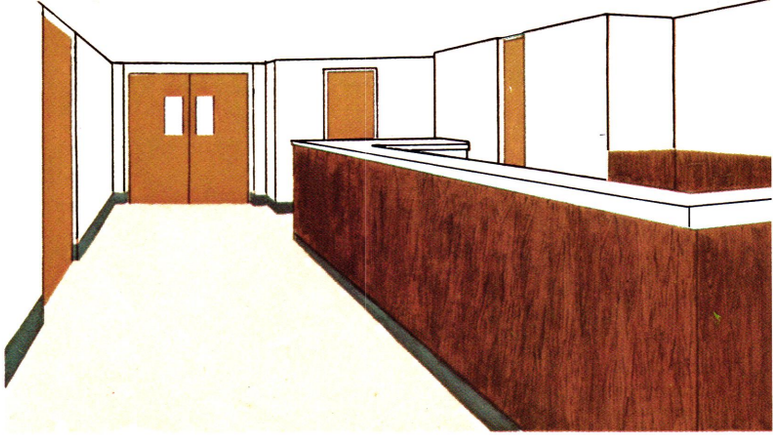
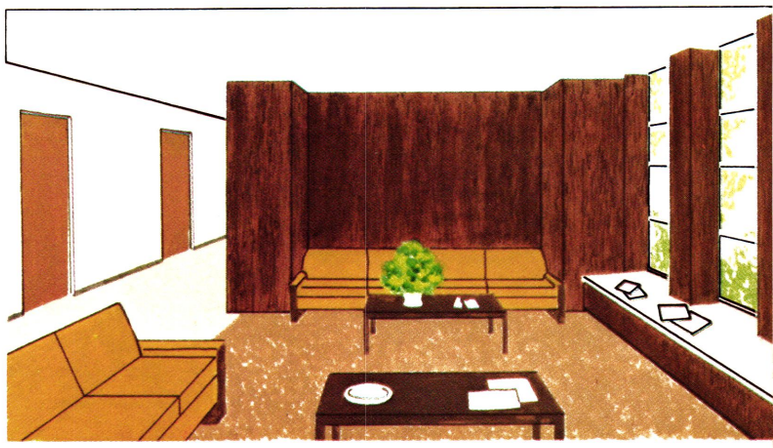
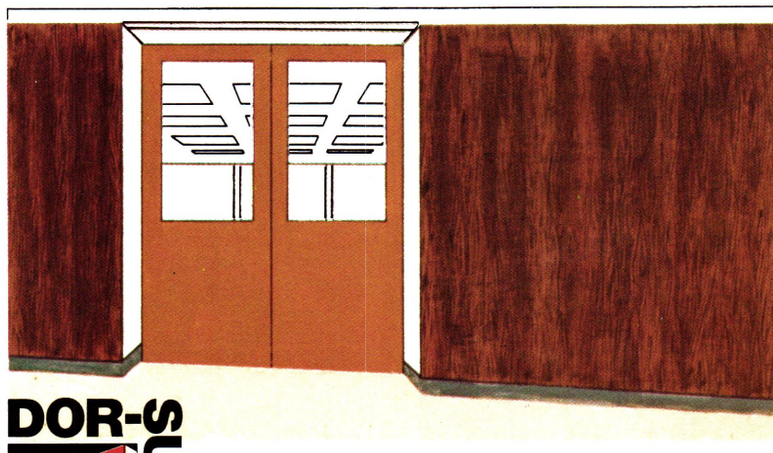
Haughton escalators match the merchandising mood of Atlanta's Perimeter Mall.

In contract, specify **the Wilson-Art look...**









there's more than meets the eye!

Three Wilson-Art laminated plastic patterns, each with individual appeal. But together, they blend, harmonize, complement. Together, they're *one* example of the Wilson-Art Look.

Here, they act as the basis for an entire color scheme, with universally coordinating benefits. But with a simple change in specification, you'll have any area as unique as you like.

Quiet, restful and subdued. Bold, dramatic and colorful. Or anywhere in between.

Simplify. Specify the Wilson-Art Look—the right specification when surface material requirements range from durability and function to pure esthetics.

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When the chips are down, you can depend on Wilson-Art.

Wilson Art®
LAMINATED PLASTICS

RALPH WILSON PLASTICS COMPANY
ARCHITECTURAL PRODUCTS DIVISION
TEMPLE, TEXAS
DART INDUSTRIES INC

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DOR-SURF

—a tough new face, from Wilson-Art! Doors surfaced with 1/8" thick Wilson-Art DOR-SURF have unique advantages throughout any hospital.

Lead-core X-Ray Doors, high-traffic, heavy-wear doors—all are available with this tough, exceptionally durable and impact-resistant facing.

Wilson-Art DOR-SURF—a new approach to some old specification problems.

To maintain design integrity, 1/16" thick Wilson-Art laminated plastic is available for fire doors.

We've shortened our name because we've lengthened our line.

Even though we're known as the company that makes Washfountains, we wouldn't want you to think that's all we make. So, we've changed our name from Bradley Washfountain Co. to Bradley Corporation. Because we're now the largest maker of group showers. Because we make Bradpack wash centers . . . and a complete line of washroom accessories. Because we have single-control and two-handle faucets for the bath and kitchen. Plus vanity tops, towel bars, soap dishes . . . everything but the kitchen sink. In short, there's a lot more to our line than Washfountains. So, we're calling ourselves Bradley Corporation. We hope you will, too.

BRADLEY Bradley

72-389

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For "life-of-the-building" beauty ...and proved performance.

Be sure you specify architectural finishes based on Dow Corning® brand silicones. More than nine years of actual in-place field performance demonstrate that finishes made with Dow Corning silicones can be specified for a 20-year life in any climate. You can select from a full spectrum of colors.

Silicone-based coatings give steel and aluminum siding, panels, roofing, fascia, and trim unmatched protection from sun, wind, and weather. They resist blistering, chalking, chipping, and peeling, and have excellent color retention. They are easily touched up in the field if marred.

Yet the cost of silicone-based finishes is almost identical with that of organic coatings, and 50 to 70% less than other kinds of high-performance coatings that have no demonstrably better performance.

A colorful new brochure on coil-coated panels using these finishes, and the names of paint manufacturers who supply them, is in the current Sweet's Architectural and Industrial Construction Files. Or write Dow Corning Corporation, Dept. A-2301, Midland, Michigan 48640.

Silicones for coatings from

DOW CORNING

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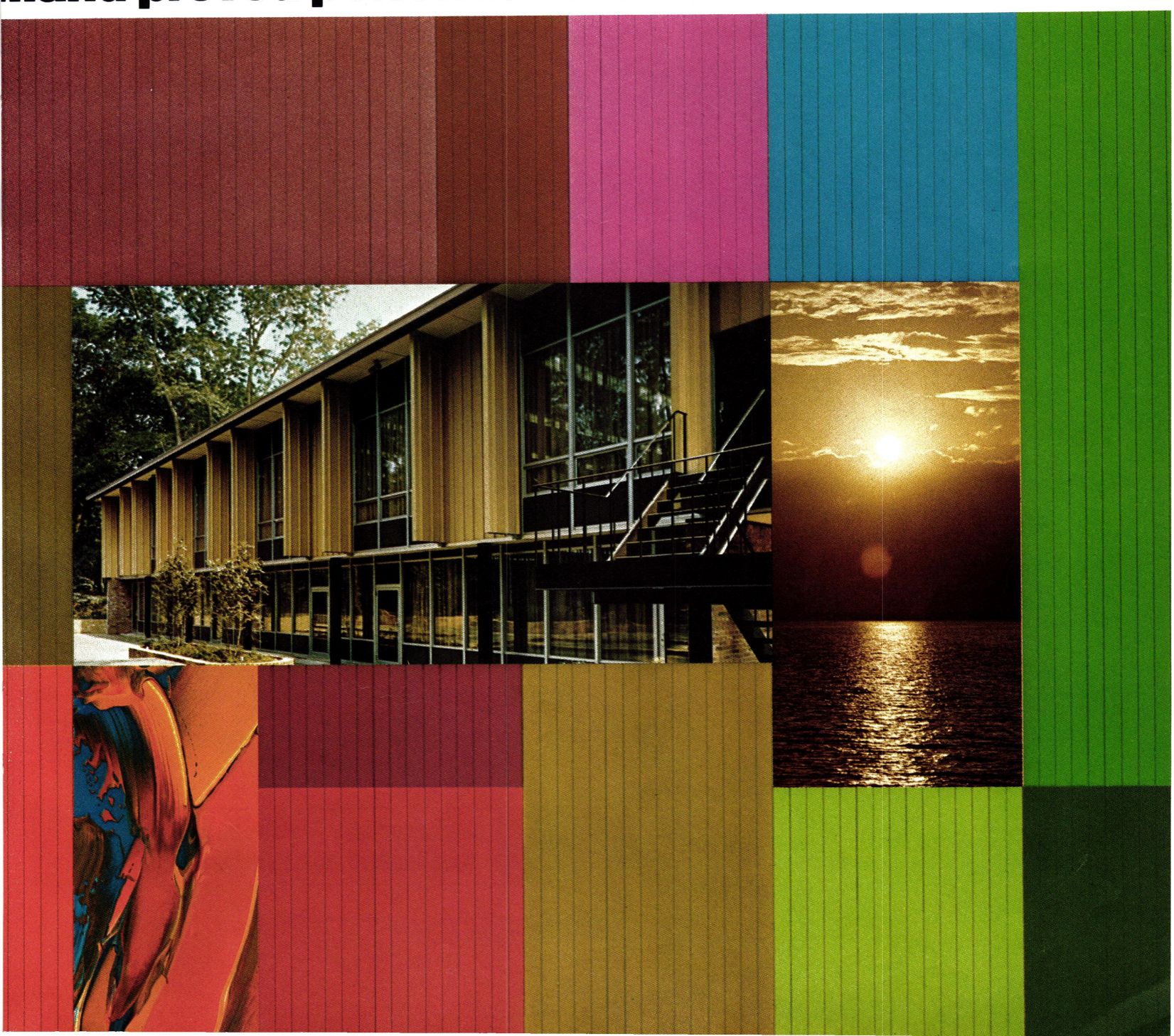

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Direct glue-down of carpets backed with JUTE

The system's benefits are fully accepted

- Lower cost than same carpet plus separate padding, or cushion-backed carpet with equal pile.
- Easy wheel and caster mobility (no pads under secretarial chairs.)
- Protection against seams opening, with no lateral stress under traffic.
- Sound absorption, low-cost maintenance, aesthetics, insulation, comfort underfoot, improved morale.

Why Jute backing is vital for success

- Jute's mesh weave and fibrous composition accept and retain adhesive, for secure bond to any subfloor or previously installed hard-surface flooring.
- Jute is over twice as thick as other no-pad backings. Cracks in old flooring won't depress carpet or be felt underfoot. Greater area is provided for "beading" seam edges with adhesive.
- Unmatched dimensional stability, indispensable for floor cutouts.
- Carpet can be pulled up, intact for re-installation.
- Helps carpets that are otherwise qualified meet fire safety codes.
- When carpet is rolled out, some floor adhesive penetrates the jute mesh to the primary backing, for additional protection against delamination.
- When "stretch" installation with separate cushion is specified for certain executive areas — in addition to glue-down for general spaces in the same site — two carpets aren't needed. Jute works well with both methods.

Write for free Architectural Guide Specification and Editorial Report

JUTE CARPET BACKING COUNCIL, INC.
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Only Onan dares to warrant its standby power systems for 5 full years.

You read it right . . . five years. And all the user has to do is make sure it's installed right and operated normally.

Sure, five years is a long time to be responsible for anything! But at Onan, we've got a great thing going for us: Complete confidence in our product.

We can cover an Onan standby power system (engine, generator and automatic transfer switch) under a single 5-year or 1500-hour warranty because we accomplished something else first.

We devised the industry's most precise design and manufacturing procedures . . . the toughest tests and inspections.

So frankly, we don't expect to have to pay off on many warranty claims.

That was assured before the standby power system left our plant.

It was designed and built as a system, by people whose only business is standby power. It was tested as a system; run in under full load for 2-8 hours.

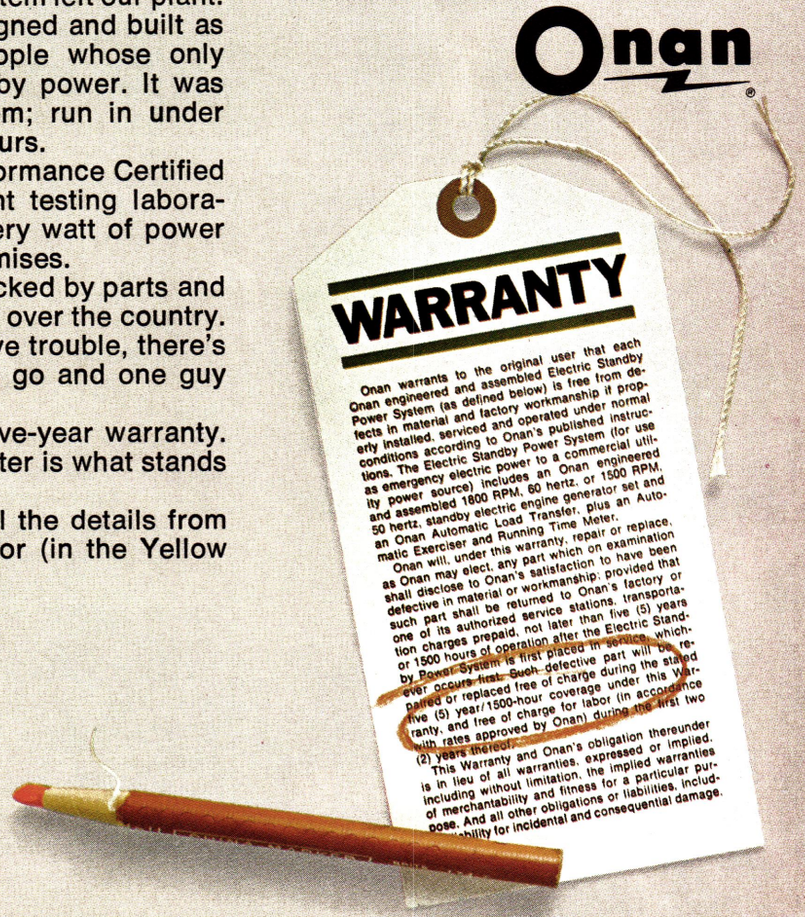
It was Performance Certified by an independent testing laboratory to deliver every watt of power its nameplate promises.

And it's backed by parts and service centers all over the country. So should you have trouble, there's only one place to go and one guy to know: Onan.

An Onan five-year warranty. The only thing better is what stands behind it.

Find out all the details from an Onan distributor (in the Yellow Pages under Generators—Electric). Ask him about our new 100% Lease Financing Plans on package installations. Or write us for more information.

Onan Division, Onan Corporation. 1400 73rd Avenue N.E., Minneapolis, Minnesota 55432



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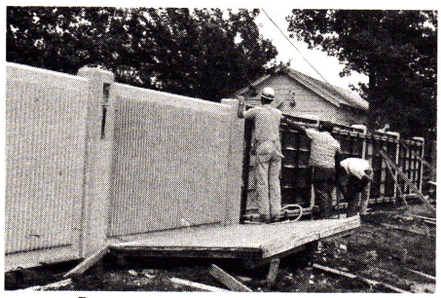
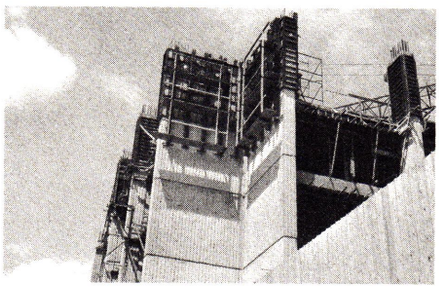
This Decorative Wall



and this **11 Story Library**



Used Standard And Custom Form Liners

Cast a prefinished wall with Symons Form Liners. Standard liners available are . . . . striated, bold striated, 1½"—¾"—½" trapezoidal rib, rough sawn cedar, rustic brick, aged board, and 1½" bush hammered deep rib. For that special effect, we will work with you to produce a custom liner. Form liners offer a pleasing departure from the monotony of flat surfaces.

Our form liner brochures will be sent to you immediately upon request.

Labor Saving Equipment & Services For Concrete Construction

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OFFICE NOTES

NEW FIRMS, FIRM CHANGES

Charles Wright announces the opening of his office for the practice of architecture. The office will be located at 326A Royal Palm Way, Palm Beach, Florida 33480.

URS/Madigan-Praeger, Inc. announces the appointments of **Thomas M. James, P.E., Robert E. Kelley, R.A., Raymond Tillman, P.E.** as associates of the firm.

Fred S. Alexander III, local architect, formerly with W.C. Muchow Associates Architects, has announced the formation of a new architectural firm in the Denver area, to be known as **Alexander Associates Architects** with offices at 4045 South Broadway, Englewood, Colorado.

J. Robert Gilchrist & Associates, AIA announces the relocation of their offices from Montvale, N.J. to Continental Plaza, located at 401 Hackensack Avenue, Hackensack, New Jersey 07601.

Lund & Balderson, announce their move to new offices at 9220 Foster Street in Overland Park, Kansas.

The architectural firm of **Nelson, Walla & Dolle, AIA,** has announced formation of a subsidiary company, **NWD Interiors,** to provide a complete planning and design service for all types of institutional and commercial building interiors.

Vincent Portuese, Jr. AIA, announces the opening of his office at Santa Monica, California for the practice of architecture with special emphasis on consulting work for architects and engineers on coordination and checking services prior to issue of plans to building officials and contractors. A special area of expertise will be on Health Facility type structures.

John E. Curtis and **Stanley M. Hunts** announce the formation of **The Landplan Partnership/Land Architects And Site Planners,** 1150 Post Road, Fairfield, Connecticut, 06430. **Arthur G. Selbert** has been named an associate in the firm.

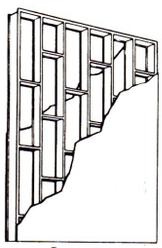
William L. Pereira Associates takes pleasure in announcing that **Eugene N. Heap, AIA,** director of their Houston office, has been appointed a vice president of the firm.

Arthur F. Sidells and **Michael Was** announce the formation of a professional corporation for the practice of architecture and urban planning under the name of **Sidells/Was/Associates** a professional corporation concerned with architecture and urban planning with offices located at 2660 South Street S.E., Warren, Ohio.

M. N. Crabtree Associates, Inc., architects have moved to Center West at 27 Mountain Avenue, Bloomfield, Connecticut 06002.

Richard E. Watson, AIA, has joined **Don Wudtke & Associates,** San Francisco, as an associate member of the firm.

KALWALL®



Versatile Kalwall® sandwich panel with fiberglass reinforced face sheets permanently bonded to aluminum grid core is practically indestructible.

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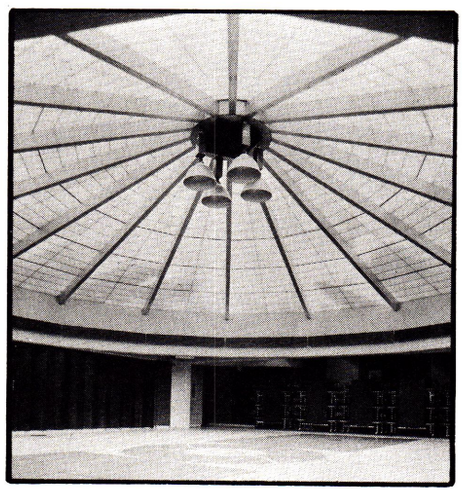
THE MIRACLE SANDWICH

Kalwall Translucent Roof Systems enable you to work wonders with light. Their miracle, modular panels distribute natural daylight *evenly*. No more interior glare. No dark corners. Now *you* control light by specifying transmission from 60% to as little as 5%.

You can arrange Kalwall components in any combination. Vary the grid patterns. Add color panels and inserts for dramatic effect. As *you* design!

Precision-built Kalwall Roof Systems weigh little. Yet they are astonishingly strong and keep out heat and cold. (Optional insulation equals 40" of concrete!) They're maintenance-free, weatherproof, vandal-proof. And so easily handled, a few men with hand tools can enclose any size roof — quickly! No big cranes needed!

Kalwall Systems have cut costs for 40,000 plants, offices, shopping malls, motels, schools, residences. Write or phone for details.



2¾" translucent Kalwall Roof System at Summit School in South Dakota.

KALWALL
CORPORATION
88 Pine Street
Manchester, N. H. 03103
Tel: 603-627-3861

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AT ORONOQUE VILLAGE, 1200 FAMILIES ARE GOING TO LIVE UNDER THE SAME ROOF.

In Oronoque Village, a condominium community in Stratford, Connecticut that will stretch for over 300 acres, GAF Timberline® Asphalt Roof Shingles is the only roofing being used.

It's not hard to see why. Timberline combines the rugged good looks of wood shake shingles with the safety and maintenance-free convenience of modern asphalt shingles. That's a tall order for one roofing.

Moreover it won't rot, crack, warp or split. It's fire resistant. And it has a special self-sealing adhesive to keep it down in high winds.

Timberline's woodlike texture comes in 6 authentic shades. All with that rich, varied shadowing that really makes a home appealing to a potential buyer.

There was one final reason why Timberline was chosen for Oronoque Village. GAF. The company that warrants this great roofing for 25 years against manufacturing defects.

GAF Timberline. The reliable roofing.

Oronoque Village wouldn't put 1200 families under it if it weren't. For further details, call your GAF Building Products distributor, or write:

GAF Corporation
Building Products Division Dept. AR-92
140 West 51 Street
New York, New York 10020

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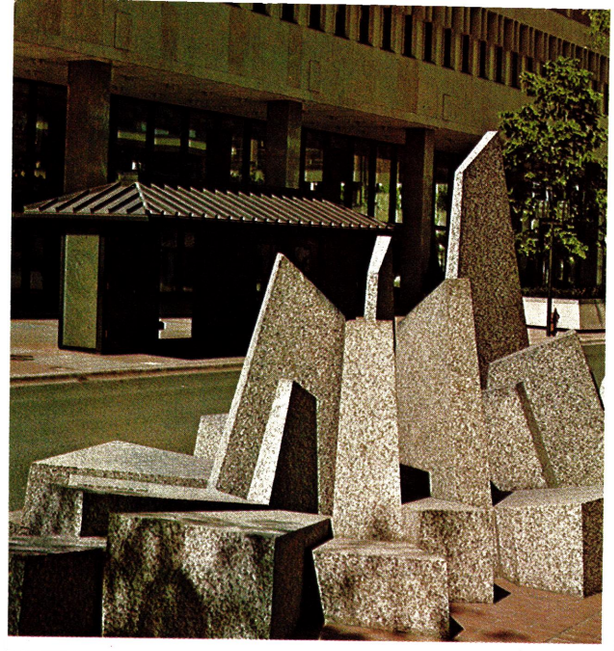

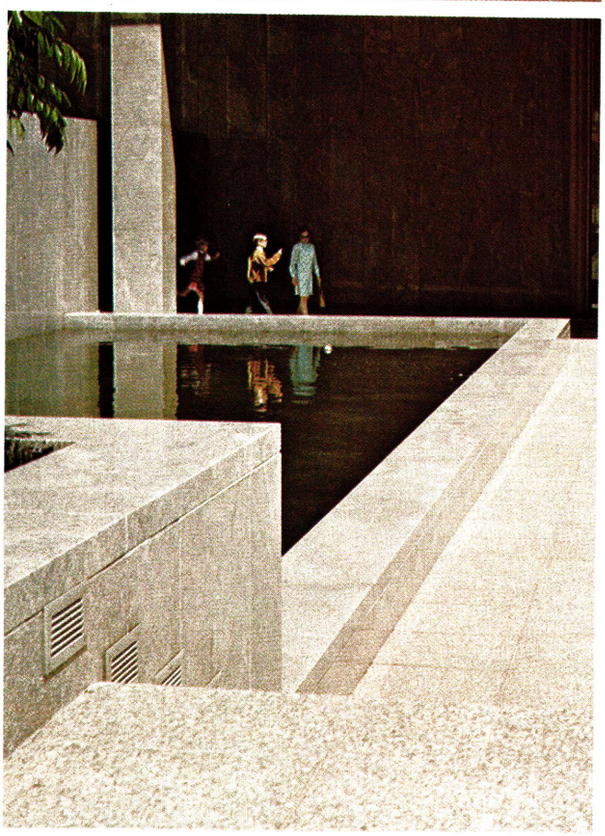

POW

If granite is so expensive, why didn't someone tell the Minneapolis Downtown Council?

The decision to make ample use of granite along the Nicollet Mall in Minneapolis wasn't exactly a snap judgment based on vague notions about cost: it was made after careful consideration of the facts about granite.

And when you consider the facts, it's easy to see why granite paving and street furniture have become significant parts of today's cityscape as malls and plazas gain in popularity. The natural beauty of polished granite resists weather, stains and all types of traffic as no other building material can. It won't fade or deteriorate, and it requires virtually no maintenance. Comes in a wide spectrum of colors, too.

How expensive is granite? Talk to our Customer Service Department about that. Tell them what you want to do and they'll tell you how it can be done. Step by step. And likely as not you'll find that granite fits your plans well on a cost-in-place basis. Refer to Sweet's Catalog No. 4.1/Co.
Or call us,
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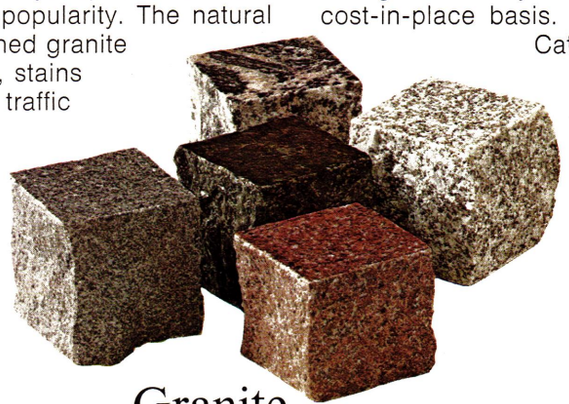

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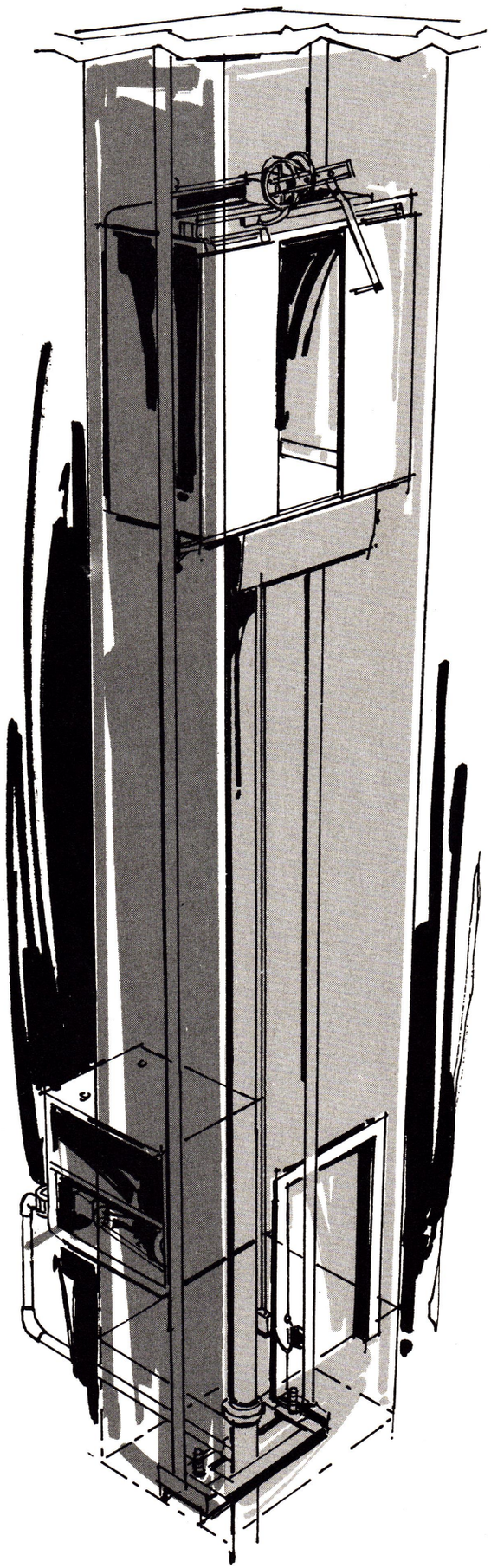

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SPM™ elevator packages help save time and money

Cost-conscious architects and design engineers can incorporate Montgomery SPM specs in their designs and save dollars for the owner . . . save time for the contractor.

The Montgomery SPM (Standard Pre-Manufactured) Oil-Hydraulic passenger elevator package is available in 3 models. The SPM meets the rigid Montgomery standards of quality construction with the advantages of quick delivery, low cost and reliable service. SPM's offer travel to 5 floors, car speeds of 125/150 fpm, flexibility in entrance, signal and accessory selection, and optional decor and finishes.

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The only acoustical fire door 9 feet tall and 30 minutes thick.

A 30-minute fire door is something you need. A 9-foot acoustical door is something you'd like. Only U.S. Plywood puts them both together, in our tall, tough, beautiful, acoustical fire door. 9 feet tall. 30 minutes thick. STC rated 28. UL tested and rated for fire resistance, heat transmission and structural integrity.

The Weldwood acoustical fire door is considerably less expensive than a comparable metal door. It also performs considerably better when tested for heat transmission. After 30 minutes in UL's test furnace, where it gets well over 1500°F, the Weldwood door's unexposed side was less than 175°F, cool enough not to harm a person forced against it during a fire. Its STC 28 rating provides good speech privacy and protection in hotels, motels and other commercial installations.

The core of this door is Novoply.® The face is your choice: striking hardwood veneers, Duraply® for job-site painting, Permaply® for solid color prefinishing, or colorful plastic laminates.

No matter what kinds of doors you're specifying, the one name to remember is Weldwood.® We have the biggest, and best, line of architectural doors in the business: interior, exterior, static- and radiation-shielding as well as acoustical and fire. For more information on any of them, call your local U.S. Plywood Branch Office.

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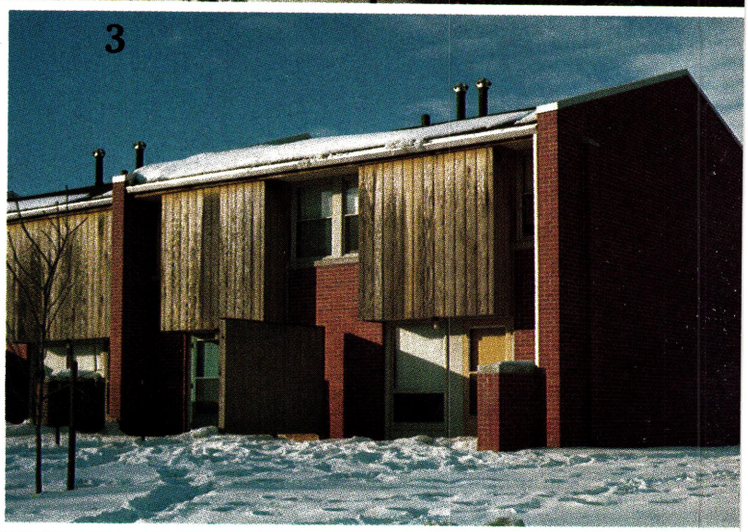
3

4

Why high-quality Andersen Windows belong in low-income housing.

If you're planning a public housing project, Andersen Windows are more practical on a total cost basis.

Made in complete units, they cost less to install. And there's no on-site exterior painting when you specify our Perma-Shield® Windows. Made with a thick vinyl sheathing on the outside, these windows will save significantly on maintenance costs over the years. They won't need scraping, painting or refinishing.

Fuel costs are lower. Andersen Windows are made with a solid core of wood—one of nature's best insulators. Our weathertight construction and welded insulating glass (optional) complete the tight design against heat, cold, dust and drafts.

Andersen Windows will cost less over the long run, and their beauty lasts as long as the building. That's why it pays to specify the best.

1. Minneapolis Housing for the Elderly

The architects wanted to make this large, 290-unit housing project into a real "home" for the residents. So Bettenburg, Townsend, Stolte and Comb, Inc. created a living community with friendly courtyard and recreation areas.

Adding warmth and pleasantness to the surroundings are Perma-Shield Fixed and Casement Windows equipped with welded insulating glass which seals out cold Minnesota winters and keeps residents snug and warm.

2. Columbia Court Public Housing

Precast concrete "shadow panels" give this 90-unit complex in Muskegon Heights, Michigan its distinctive look.

The architects, Haughey, Black & Associates, designed special recesses into the panels where Perma-Shield Casement windows fit snugly.

The white vinyl sheathing on the outside blends well with the smooth-surfaced concrete. These windows can be opened straight out, allowing elderly residents to clean both surfaces from the inside—another cost-cutting benefit of Andersen Windows.

3. Family Housing Project

Hackner, Schroeder, Roslansky & Associates received an award from the Wisconsin Chapter of the A.I.A. for this series of townhouse groups in La Crosse, Wisconsin.

They were cited for the use of materials which added dignity and distinction to these low-cost dwellings. Among the materials used were Andersen Beauty-Line™ and Narroline™ Windows.

Beauty-Line windows combine a fixed upper sash with a ventilating, awning-style lower sash. They can be used singly or in groups, making them as versatile as they are attractive.

4. Award-winning Low-Rent Apartments

Located in Herman, Minnesota, this group of one-story 4-plexes received an award from the Minnesota Chapter of the A.I.A. for being the best representative example of the theme of "Involvement."

The architects, R. F. Ackermann and Associates, carried the residential character of the neighborhood into these apartments with a warm and simple design.

Adding to this feeling are graceful gliding doors by Andersen. They open onto comfortable, private decks. Andersen Beauty-Line Windows provide picture window beauty at a practical price.

For more information on Andersen Windows and Gliding Doors, check your Sweet's file or contact your nearest dealer or distributor.

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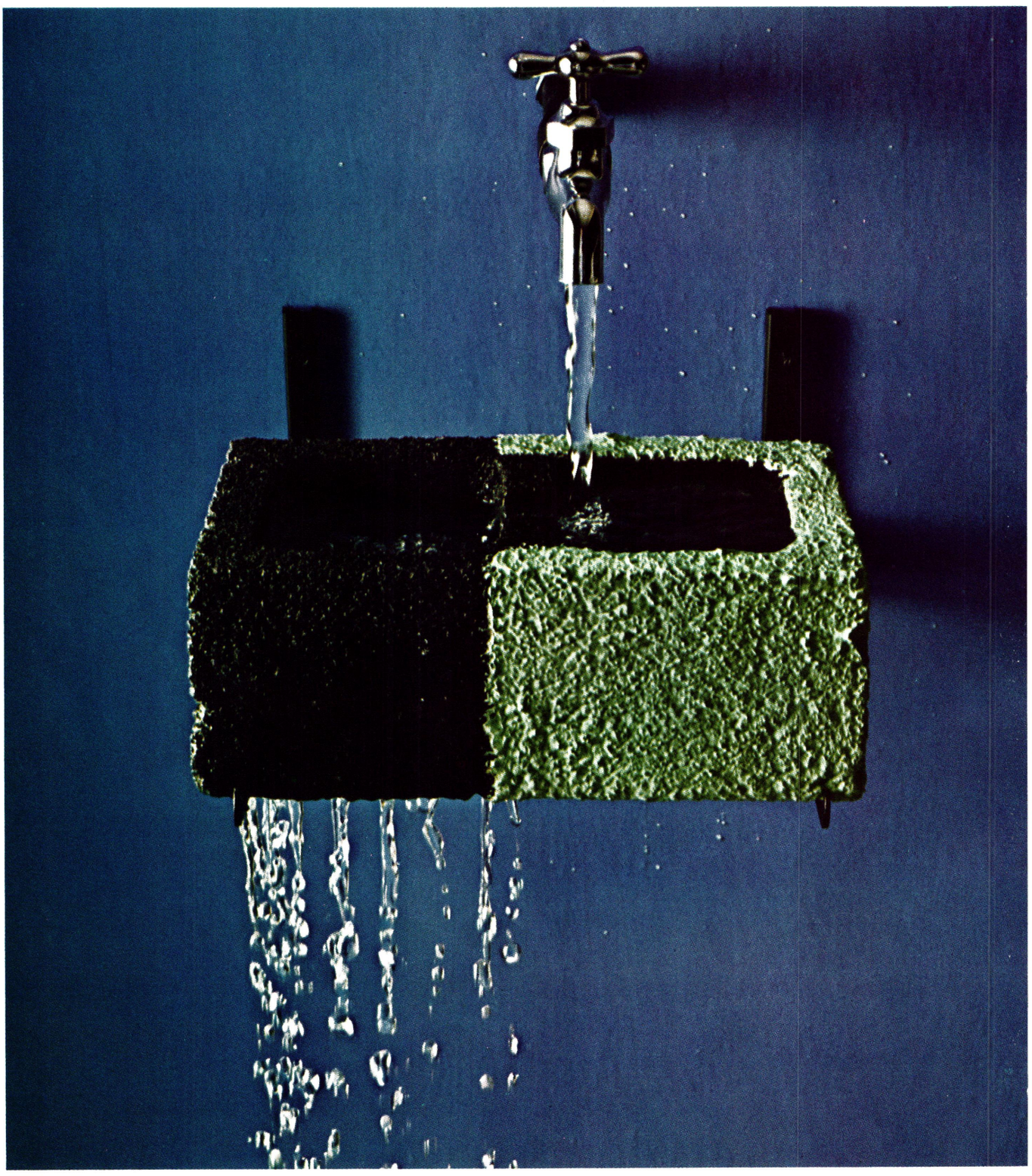
Pliolite:



watertight

Cinder block* demonstration shows water can't penetrate Pliolite resin-based coating.

PLIOLITE® based coatings and paints can make even sieve-like cinder block impenetrable.

Check the picture on the left: water literally pours through the untreated side of the block. The other half is watertight, thanks to paint made with PLIOLITE resin.

This is why leading manufacturers formulate masonry, texture and swimming pool paints—as well as waterproofing sealers and curing membranes—with PLIOLITE resins.

PLIOLITE based coatings are complete systems which are easy to apply by spray, roller or brush; no on-site mixing is necessary. They have excellent adhesion on wet surfaces as well as dry. Above grade or below, they dry quickly to form tough, long-lasting surfaces with exceptional resistance to chemicals, weathering and ultraviolet light.

Waterproof paints made with PLIOLITE resins meet the stringent requirements of Federal Specification #TT-P-001411 in making concrete so completely water-resistant.

For more information on PLIOLITE, call: (216) 794-4867. Or write Goodyear Chemicals Data Center, Dept.U-84 ,Box 9115, Akron, Ohio 44305.

*Standard closed-bottom cinder block.

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CHEMICALS

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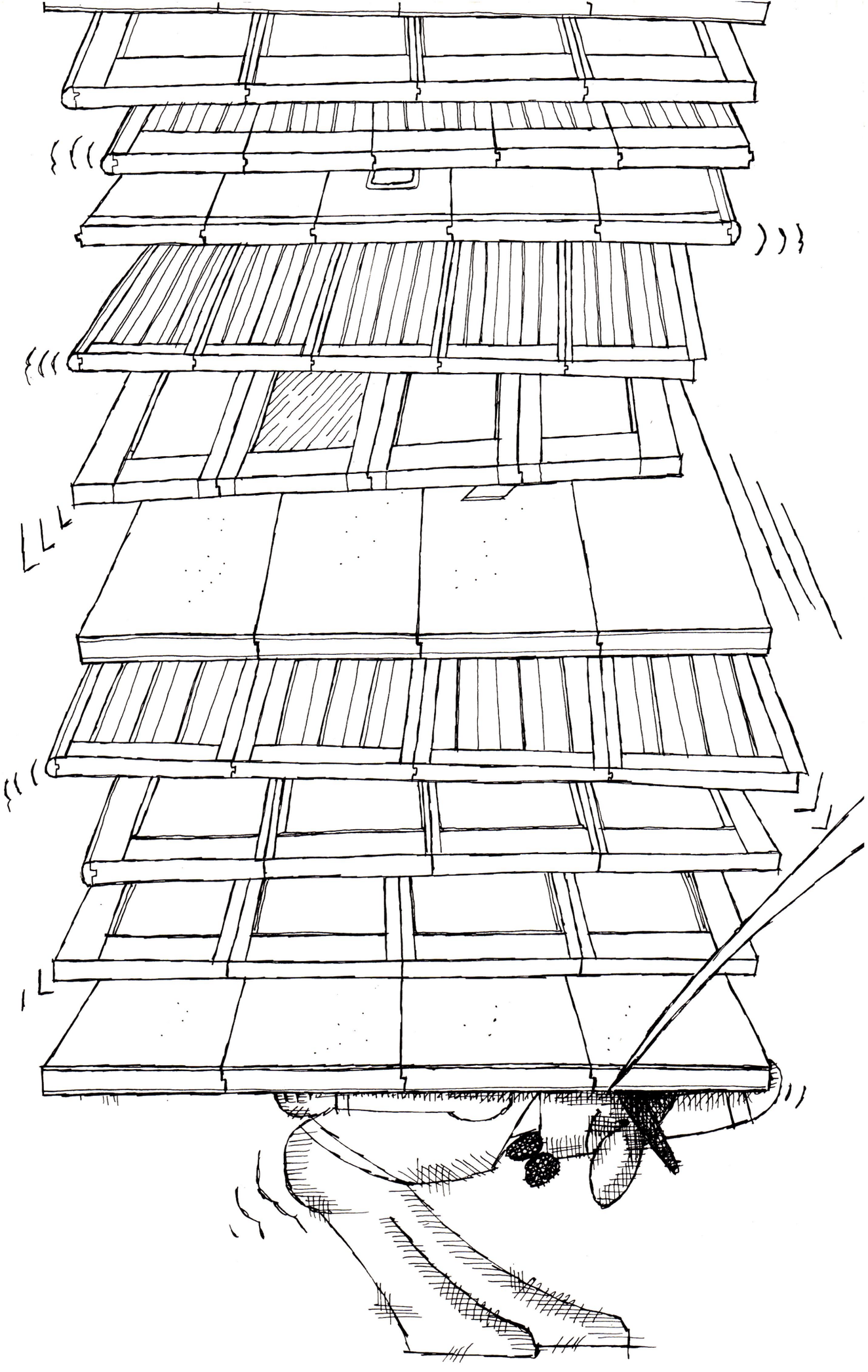

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Providing one source for residential, commercial and industrial garage doors makes it quite a load. But the weight we carry is to make your job easier. Raynor engineering plus a wide selection of materials, styles and sizes gives you the best door to fit your requirements, at a price to fit your budget. A better deal than you'd get from the guy who tries to make your specs fit the few doors he carries. And every Raynor overhead-type door has its registration number permanently recorded on data film for positive identification and quick replacement of any damaged parts . . . today, tomorrow or twenty years from now. Send for one of our handy garage door reference guides and get all the specifications. Raynor . . . we build better doors.

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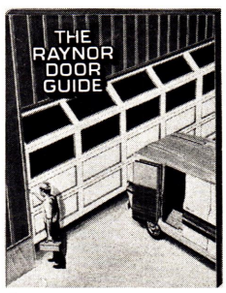

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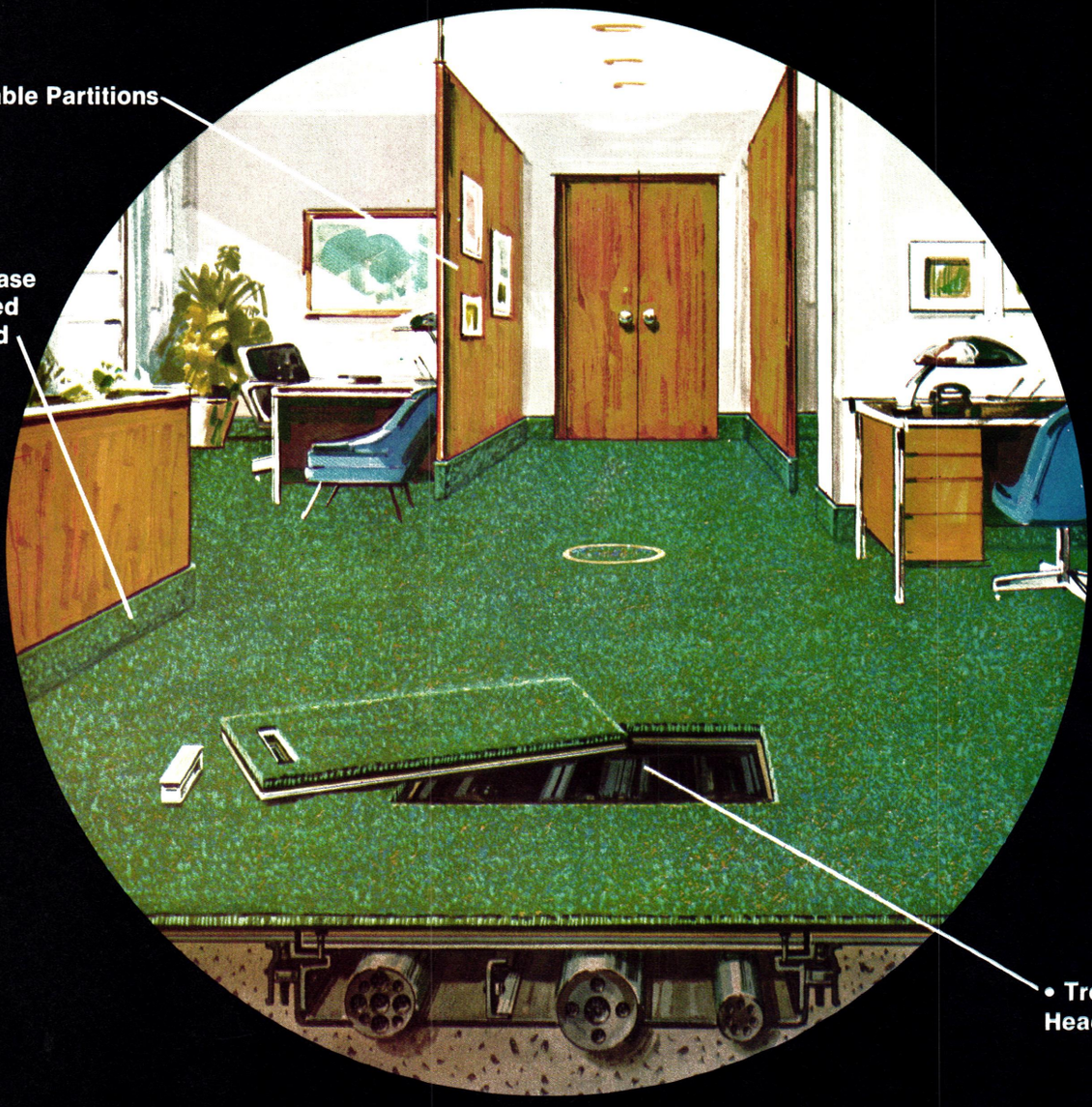

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This is the World Trade Center in New York City. It is one of the biggest, most expensive building complexes in the world. It has 43,600 windows. And every single one of them is sealed with LP® polysulfide polymer.

We rest our case.

Suffice it to say that nobody in his right mind would skimp or accept anything less than the very best in a project costing upwards of $700,000,000.

Which explains why more than a decade of in-depth study went into every conceivable aspect of this monumental complex which has been described as "a preview of 21st Century construction methods."

Selecting the proper sealant for the World Trade Center's twin 110-story towers was an arduous task. But after the data had been thoroughly interpreted, this decision was made —the sealant must be one based on Thiokol's two-part LP® polysulfide polymer.

The choice was an excellent one for many reasons. First of all, no other kind of sealant had built up such a successful track record—more than 20 years of performance-proven dependability. Secondly, every sealant that bears Thiokol's exclusive Seal of Security has proven that it can withstand everything the elements can dish out.

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For instance, sealants based on Thiokol's LP® polysulfide polymer have demonstrated that they can adhere to glass and aluminum in spite of stretching and contracting joints. They have withstood simulated environmental changes varying from —15° to 158°F.

Needless to say we're proud that a sealant based on our formula measured up to World Trade Center expectations. And, quite frankly, we're confident that such a sealant will measure up to yours.

For more information, including detailed comparisons between sealants based on Thiokol's LP® polysulfide polymer and eight other kinds of sealants, write: Dan Petrino, Thiokol Chemical Corporation, P.O. Box 1296, Trenton, N.J. 08607.

Thiokol

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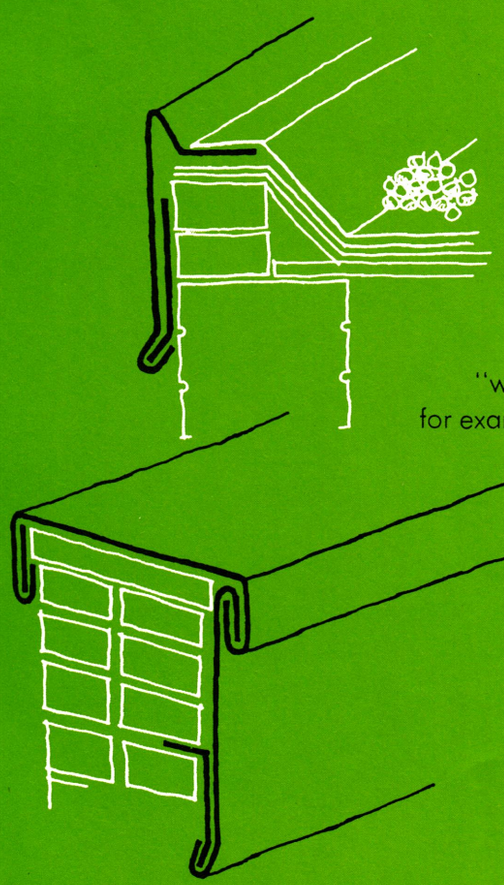

Where quality is vital and cost relatively unimportant, why not specify the best—TCS

Items grouped under the general term "weathersealing"— fascia and counter flashing, for example — occupy a rather humble place among building components. But as every architect is aware, failure in such areas can often be very serious indeed, whereas the monetary saving involved in using an inferior material will normally amount to only a minute fraction of the total cost of an average building. It is in this context that we should like to suggest your considering the specification of TCS (Terne-Coated Stainless Steel), a product which provides built-in safeguards against failure that are unmatched in the field of architectural metals.

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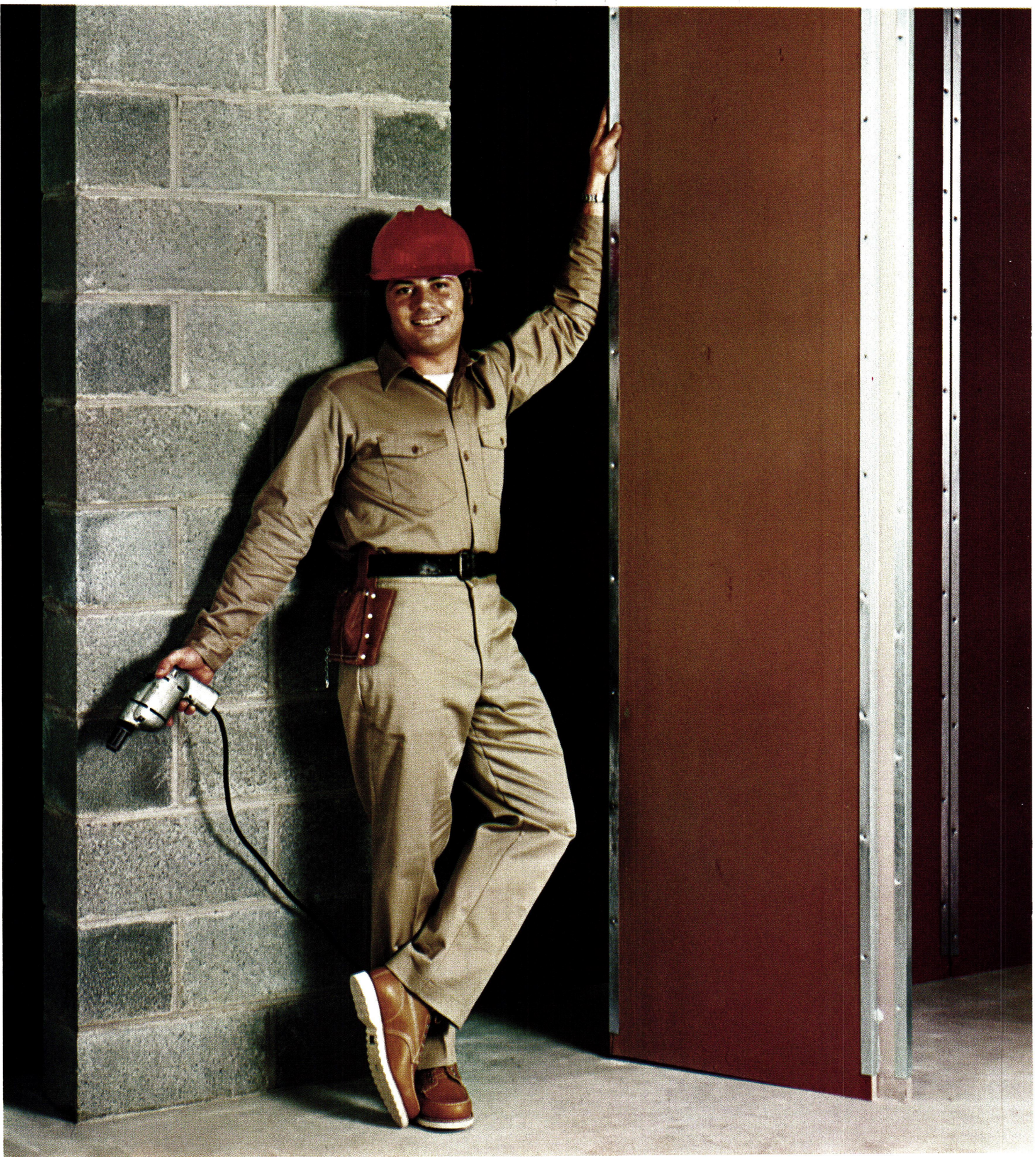
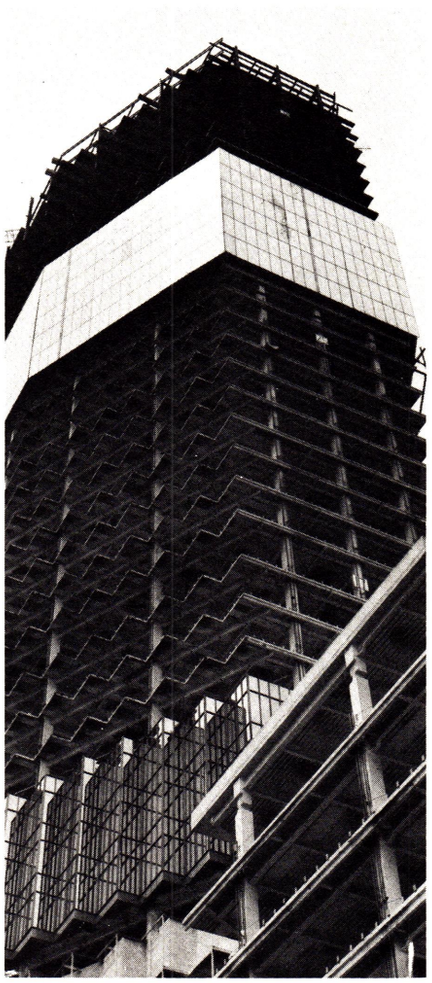


R CHOICE

You can specify masonry for shaft enclosures, or you can save space and weight with Gold Bond Metaledge Corewall.

Metaledge Corewall™ goes up in one piece — one step. Constructed in "ship-lap" configuration, panels have water-repellent surfaces. Offset long edges come with 24-gauge hot-dip galvanized steel channels attached. Panels are progressively attached to 2 x 2-inch, 20-gauge tracks with 2-5/8-inch self-drilling screws. Corewall is faced with any combination of regular gypsum wallboard, Fire-Shield Wallboard, M.R. Board or Durasan® to meet specific fire rating, acoustical rating, aesthetic or job requirements.

This is the 57-story IDS Tower in Minneapolis, Minn. — tallest structure between Chicago and the West Coast. 425,000 square feet of Metaledge Corewall have helped slash structural steel requirements substantially. Metaledge Corewall not only met every shaft wall material specification for the Tower, but was far less expensive than the method specified in the first place...far faster and easier to install.



Concrete block is 6" to 8" thick, weighs in at 30-40 pounds per square foot. Metaledge Corewall is 2" thick, weighs 10.5 pounds per square foot. Which would you rather specify to enclose your high-rise elevator shafts, stairwells and other vertical chases?

Space-maker. Since Metaledge Corewall panels weigh less, take less space — your building requires less foundation, less structural steel. It adds up to an average of ½ square foot more usable space per lineal foot of shaft enclosure. That's space you never had before at no extra cost.

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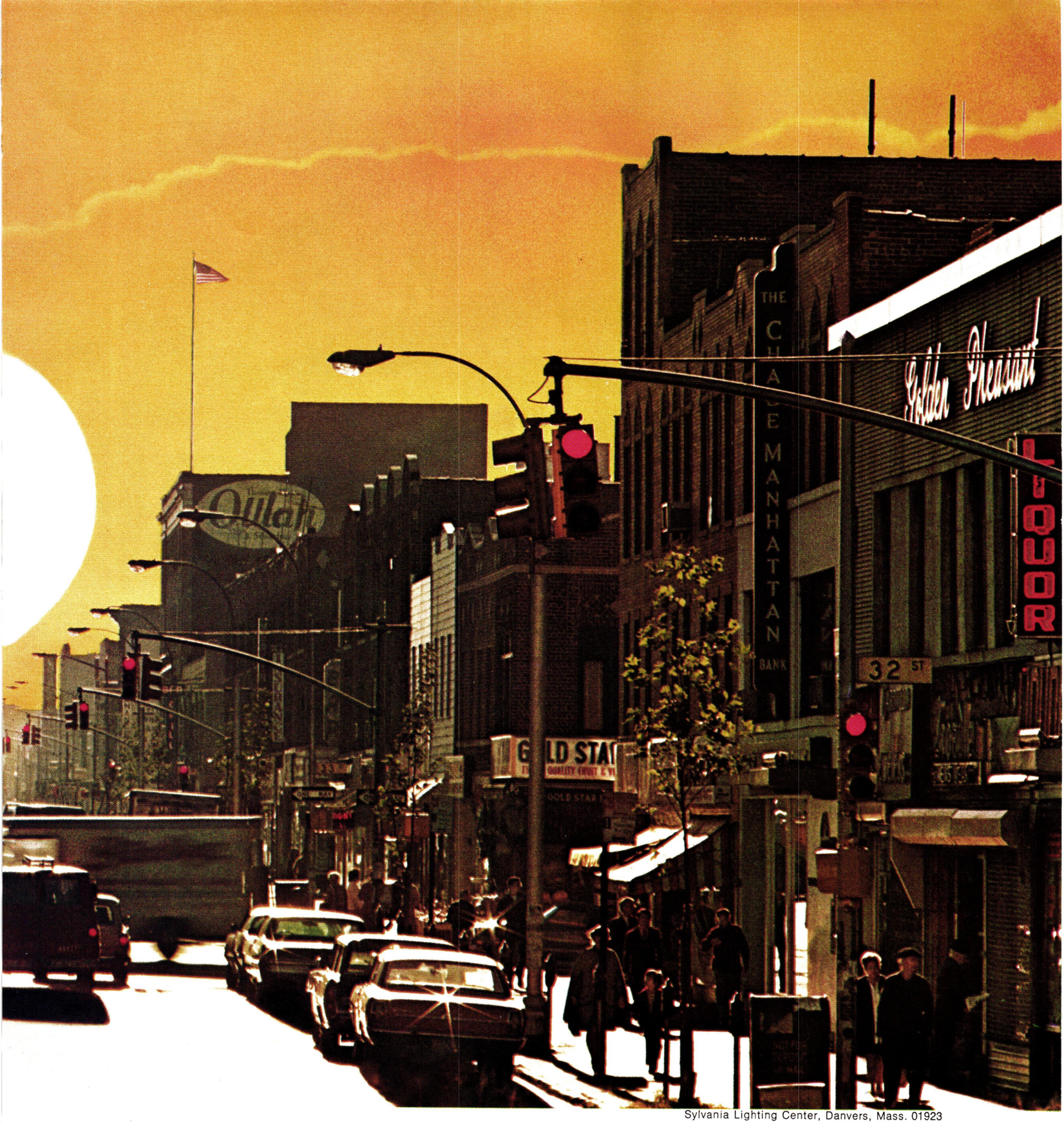

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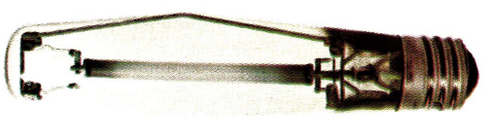

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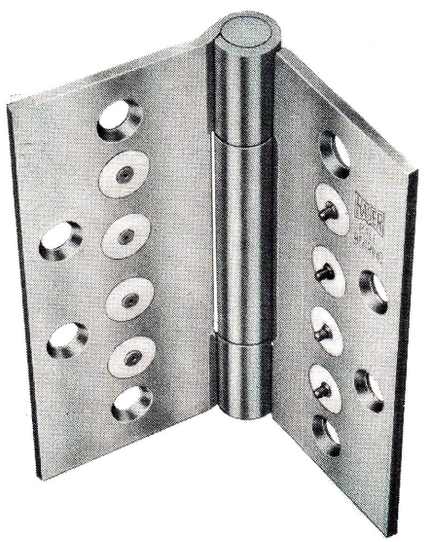
The Hager Hinge Company invites inquiries from architects, builders, and door manufacturers for further information on the simplistic features of this highly efficient component in security systems. It is practical and compatible in concepts for protection in a single story warehouse or in high-rise structures.



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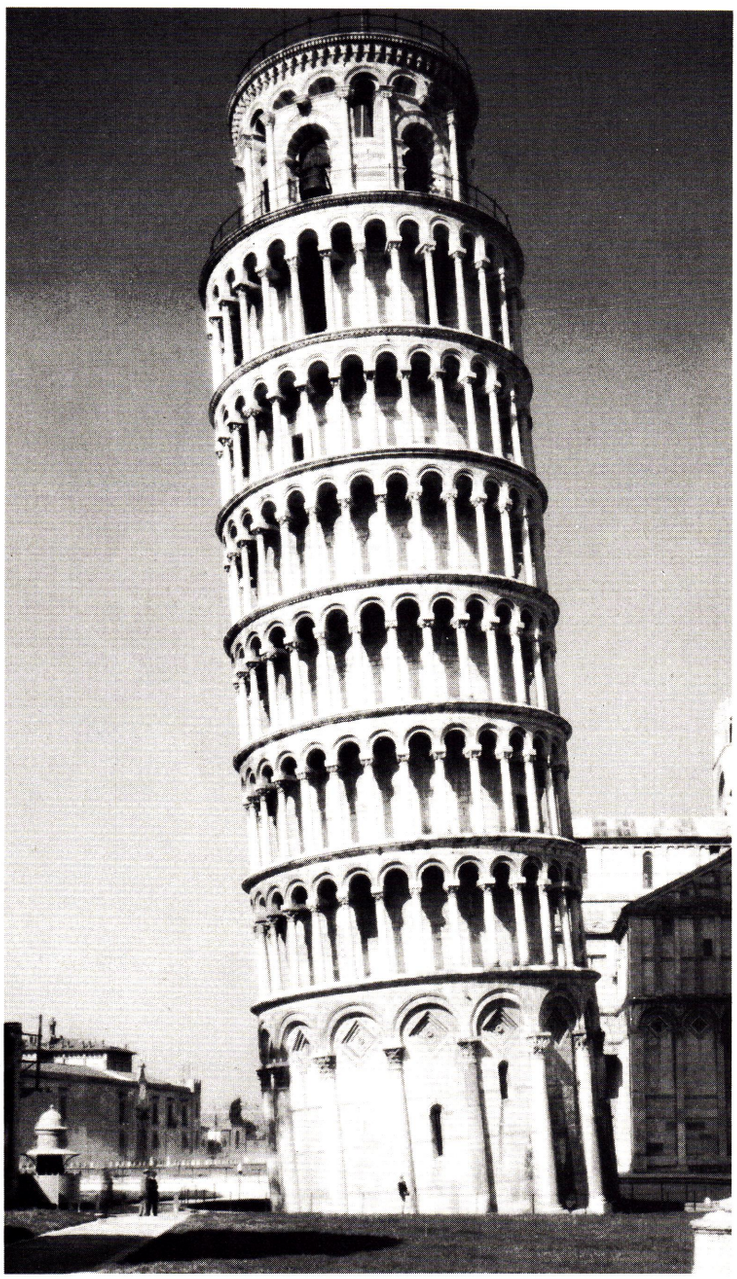

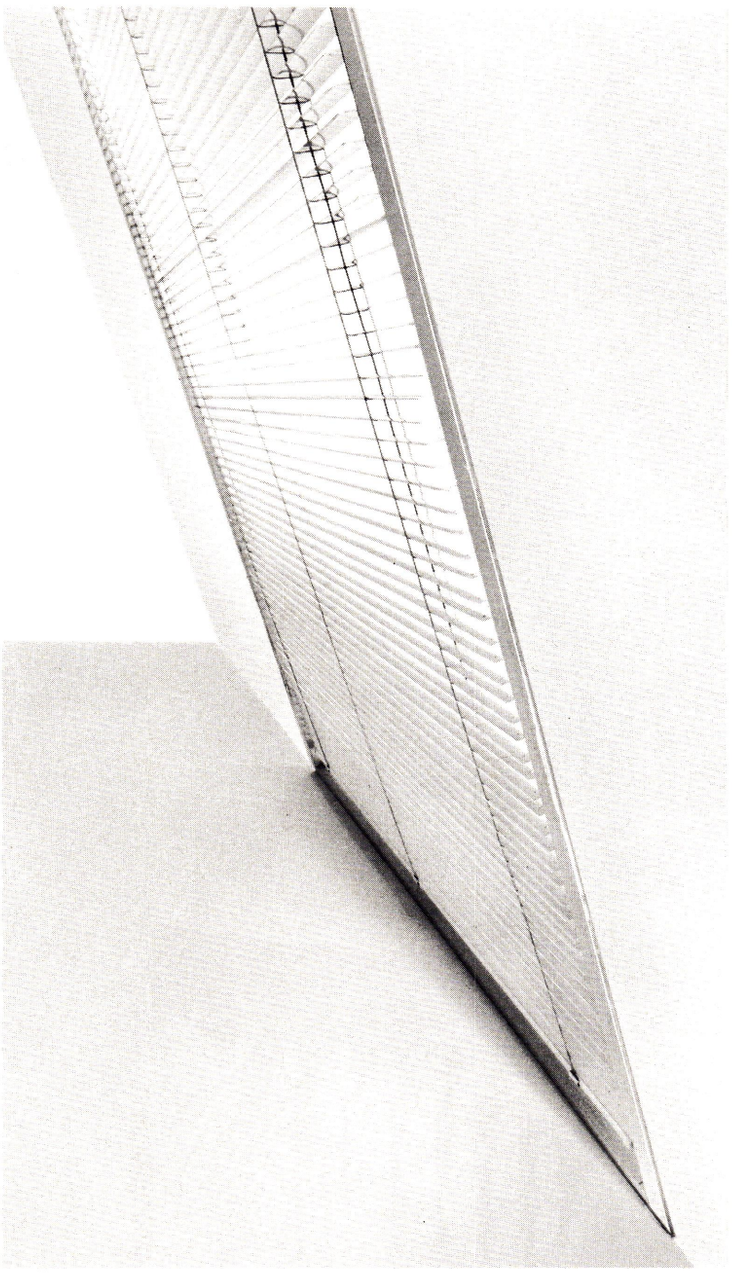

If it ever needs blinds, we're ready.

The law of gravity notwithstanding, we were asked to design venetian blinds for walls that slant. (On a *new* structure.)

We did it—with a special adaptation of the Venette.® The Venette, because it's the best blind for modern office buildings.

One-inch louvers give excellent light control, but remain almost invisible when open. Design features include spring-tempered louvers, rigid torque-tube head, aluminum wand tilter, polyester cable ladders.

There's a staff of designers ready to do the impossible for you, too. If that's what you need.

Write Alcan Building Products, Division of Alcan Aluminum Corporation, 100 Erieview Plaza, Cleveland, Ohio 44114.

See our catalog in Sweet's and Spec-Data.

ALCAN ALUMINUM

ALCAN

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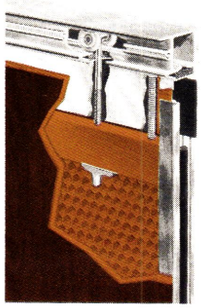
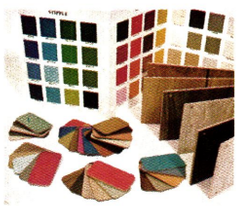
Movable Kwik-Wall creates a beautiful look of permanency

Add flexibility and usability to your room space with Kwik-Wall, the movable wall partitions featuring qualities of a permanent wall . . . attractiveness, durability, sound control. The solid construction of Kwik-Wall makes each area it divides a separate room in the strictest sense of the word. Impressively designed, Kwik-Wall adapts to blend with any design motif, beautifully.

Portable Kwik-Wall (left) requires no tracks on ceilings or floors. Free-standing panels can be stored anywhere, easily rolled into position on optional retractable wheels. Select 1-3/4" standard or 2-1/4" deluxe Kwik-Wall.



Track-Mounted Kwik-Wall glides with ease on inconspicuous ceiling tracks; needs no floor guides or rollers. Pocket doors provide complete, coordinated concealment of panel storage. 2-1/4" deluxe or 3" master thickness.

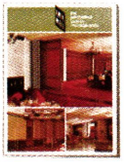


Over 1500 Decorator Facings to select from to give your decor the look of permanence. Chalkboard, chalk trays, corkboard finishes available, in addition to pass-doors with cylinder locks.

One-Hand Locking Operation, insert crank and give a half-turn; spring-loaded top rail expands firmly against ceiling, forming effective sound seals around each panel perimeter.

the permanent look in movable walls

KWIK-WALL



Send for Free Color Brochure

Kwik-Wall® Company, Dept. 22
P.O. Box 3267, Springfield, Illinois 62708

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Title_____
Firm_____
Address_____
City/State_____ Zip_____

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San Antonio Convention Center
Architects: Noonan, Krocker and Dockery,
San Antonio, Texas

When you specify clay tile floors, specify Hillyard Onex-Seal II® to keep them like new.

Clay tile floors have a striking beauty all their own. But without a protective seal, severe disintegration from within and unsightly staining from without can dramatically reduce the life of the floor.

Onex-Seal II is a penetrating finish that effectively seals the grouting against moisture, to prevent both efflorescence and discoloring stains. It's your best assurance that the clay tile floors you specify will provide long-lasting beauty and ease of maintenance for your client.

And your client's clay tile floors will look better longer when you specify regular maintenance with products like Hillyard Super Shine-All®. Abrasives, alkalis, soaps, acids, oils, and solvents commonly used in floor maintenance programs have harmful effects on clay tile. But, Super Shine-All is a powerful, yet gentle, neutral cleaner for all clay tile surfaces. It's just one of the quality Hillyard products that will keep tile new-looking and keep maintenance costs low.

A Hillyard Architectural Consultant will be happy to recommend the best products and procedures to include in your specifications. Just say the word and we'll have him get in touch with you. Or look us up in Sweet's or ask for our Uniformed Numbered File with complete information on clay tile.

HILLYARD
FLOOR TREATMENTS

ST. JOSEPH, MISSOURI USA
TOTOWA, N.J. SAN JOSE, CALIF.
BOSTON, MASS. DALLAS, TEX.
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The most widely recommended and approved treatments for every surface

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Virtually indestructible, flame-retardant furniture . . . a hot new idea from Thonet. Lounge chair, settee, sofa and tables as durable as they are handsome. Resist scratches and stains from most common solvents. Made of super-strong "Kydene," an acrylic-PVC alloy from Rohm and Haas. Thermo Orange. Red Hot. White Heat. Torch Black. Get 'em while they're hot. Thonet Center of Design. New York. Chicago. Los Angeles. San Francisco. Dallas. Miami. Or write Thonet Industries, Inc., One Park Ave., New York, N. Y. 10016.

THONET
CENTER OF DESIGN

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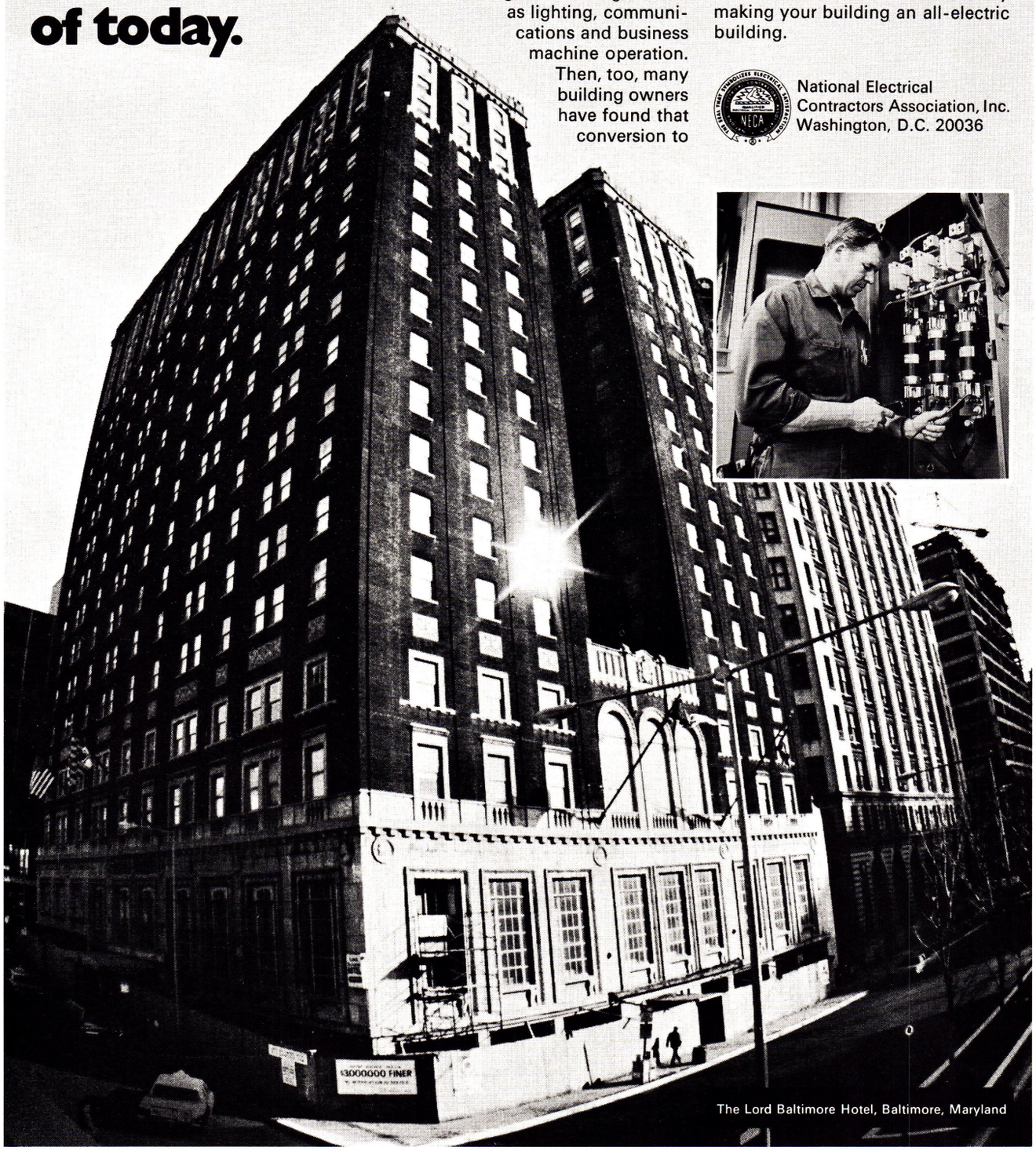
The electrical promise of tomorrow needs the electrical contractor of today.

While your building gets a face lift, maybe a qualified electrical contractor should give it a change of heart. A change in which he updates the electrical system control center to make it the heart of all your building's power needs. To make it an all-electric building. Advantages? Higher rentals. Not only because an all-electric building gives more rentable space. But because tenants appreciate the cleanliness, comfort, and convenience of electrically controlled heating and cooling as well as lighting, communications and business machine operation. Then, too, many building owners have found that conversion to all-electric systems has resulted in lower operating costs, prolonged systems life, lower maintenance expenses.

While you renovate and modernize . . . this is the time for a qualified electrical contractor to make the change. He has the backlog of specialized experience, the advanced equipment, the flexible and well-trained work force, and the awareness of local codes to do the job right. To match changing power needs. And to match them best by making your building an all-electric building.

National Electrical
Contractors Association, Inc.
Washington, D.C. 20036



The Lord Baltimore Hotel, Baltimore, Maryland

Long life!
New "Champagne" Kalcolor® aluminum

Ask for a sample of our "Champagne."

This new shade of Kalcolor architectural aluminum is that rare pivotpoint color—between light-and-dark, coolness-and-warmth—around which daylight can turn. It makes buildings come "alive" with color-change through the bright morning. Warm sunset. Cool evening.

Yet for sunfast long life, this material is unsurpassed.

Kalcolor aluminum has a thick, hard anodic coating of integral color uniquely resistant to outdoor exposure. The exclusive process for producing it—developed, patented and licensed by Kaiser Aluminum—uses no dyes.

Already it is the pride of buildings worldwide in Gold, Light Amber, Amber, Statuary Bronze, three new Grays and Black.

For your sample of new "Champagne"—and locations of approved Kalcolor aluminum anodizers—write to Architectural Marketing Manager, Room 2142, Kaiser Center, Oakland, CA 94604.

See our Aluminum in Architecture catalog in Sweet's Architectural File., Index No. 5.1/Ka.

KAISER ALUMINUM

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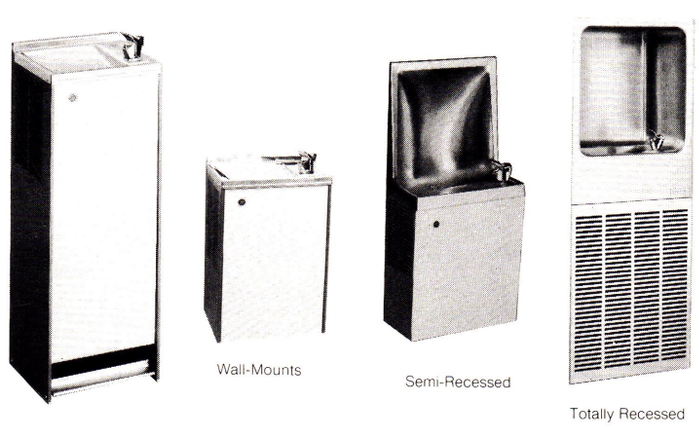
Westinghouse has 4,987 Service Technicians trained to service water coolers any place in the nation

sure service

Actually, they don't get many calls for water cooler service, but if a user ever has a problem, it's nice to know that a Westinghouse refrigeration expert is available to keep things flowing. And it's also reassuring to know that Westinghouse Nationwide Sure Service includes both parts and labor at no charge for one full year. A reliable water cooler that's easy to install . . . backed by service you can count on anywhere in the country. That's the kind of water cooler you can specify and forget about . . . because your customers won't be coming back to you with problems.

Westinghouse Water Coolers, Columbus, Ohio 43228

Contact your nearest Westinghouse Distributor for complete information



Floor Models | Wall-Mounts | Semi-Recessed | Totally Recessed

You can be sure . . . if it's Westinghouse

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Bally belongs.

For mass feeding in the clouds
or here on earth
Bally Prefabs set the standard
for Walk-In Refrigeration

Bally Walk-In Coolers and Freezers belong everywhere mass feeding takes place. They can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of foamed-in-place urethane, UL 25 low flame spread rated. Choice of stainless steel, aluminum or galvanized. Easy to enlarge . . . easy to relocate. Refrigeration systems from 35°F. cooling to minus 40°F. freezing. Subject to fast depreciation and investment tax credit. (Ask your accountant.) Write for 28-page book and urethane sample. **Bally Case and Cooler, Inc., Bally, Pennsylvania 19503.**

Bally®

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ADDRESS ALL CORRESPONDENCE TO DEPT. AR-9

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It's probably the most versatile door closer you can specify

If fits anywhere...

Is there anything that says it can't be attractive too?

the **Norton**® Apollo closer

1197 C

It's about as versatile as it can be. Plus or minus 25% spring power adjustment. A newly designed rack-and-pinion, plus adjustable back-check protection.

And it fits anywhere. It only has a 2″ projection. With non-handed installation. And you can specify regular arm, parallel arm or top-jamb mounting.

Attractive? You bet . . . contemporary narrow-projection styling. Covers of anodized bronze, brass or clear aluminum; or 67 imported or native wood grains. Plus all popular finishes.

For complete details, contact your Norton Representative or Eaton Corporation, Lock and Hardware Division, Norton Marketing Department, Box 25288, Charlotte, North Carolina 28212.

EATON Security Products & Systems

For more data, circle 76 on inquiry card

Efficient building idea: A new built-up roofing system with a completely inorganic reinforcement.

New Perma Ply*-R felts are reinforced with *inorganic* Fiberglas*.

This means they won't rot or char.

Won't wick volatile oils from the asphalt and cause brittleness.

And won't absorb moisture. (The asphalt is embedded into the porous felts to form a monolithic system. This helps prevent wrinkles, buckles, curling, blisters and fishmouths.)

Perma Ply-R felts can be installed and left exposed without the final surface treatment for up to 6 months (while other trades are completing construction).

Since 1963, Perma Ply-R test roofs and roof sections have been applied in all climate zones in the United States.

Results: not one known failure due to Fiberglas Perma Ply-R.

These Fiberglas felts are now available in all states east of the Rockies.

For more information, write to Mr. A. E. Meeks, Architectural Products Division, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

Energy Conservation Award

Owens-Corning is offering awards to stimulate new designs and ideas for conserving energy.

Special Steuben sculptures will go to the three architects or engineers who—according to a panel of independent judges—do the best job of designing buildings that don't waste fuel.

For details, write to Mr. Meeks at the above address.

*T.M. Reg. O.-C.F.

Owens-Corning is Fiberglas

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New Trimbrook™ Urinal clears cigarette butts so custodians don't have to.

Strong siphon jet action keeps urinal clean and clears cigarette and cigar butts and other small solids. Quietly. Your client will thank you for saving him custodial time and maintenance costs. More efficient than the traditional wash-out type that flushes only liquid waste. But costs no more. Modesty shield designed in. Flushes with a minimum working pressure of 15 psi. The best keeps getting better.

Part of a complete line of commercial and institutional fixtures and fittings. Write for details. American-Standard,
P. O. Box 2003,
New Brunswick,
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Shown with Sloan Royal valve 186-11.

AMERICAN STANDARD
PLUMBING / HEATING

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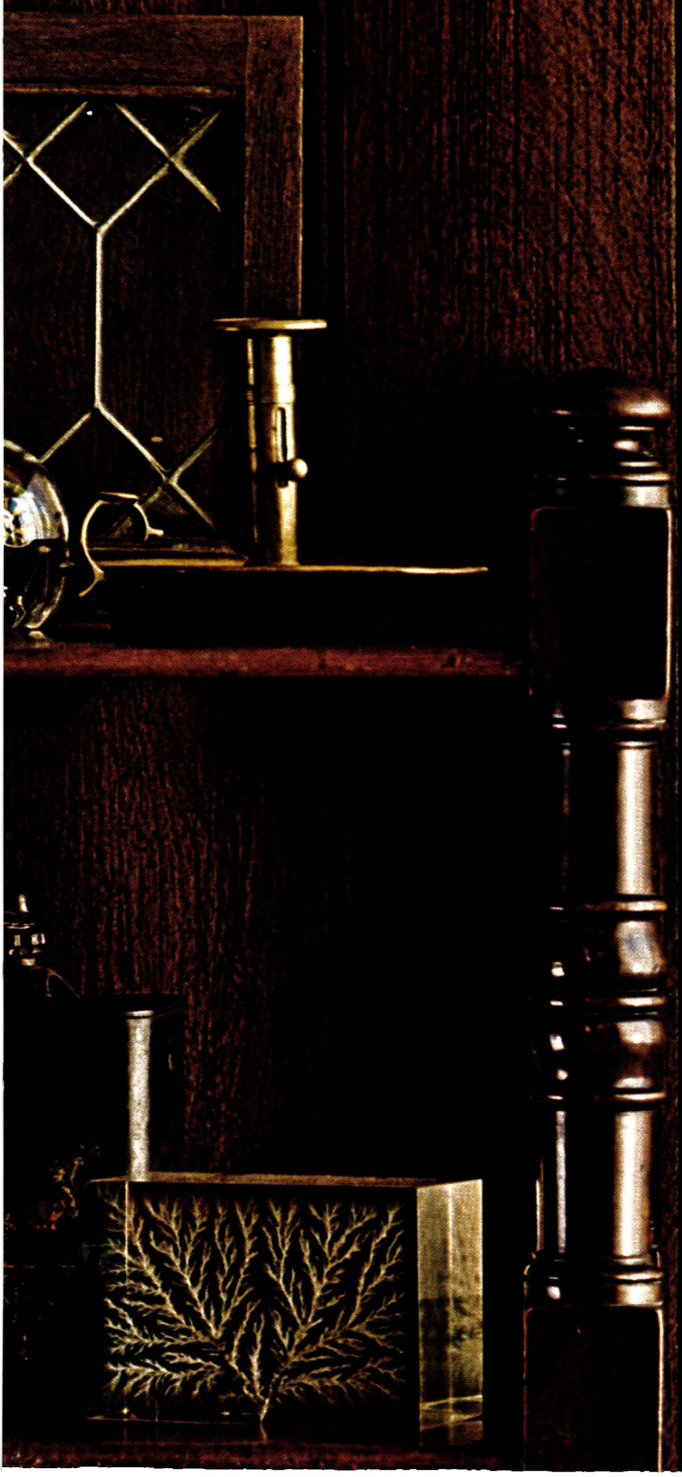
RENAISSANCE™



The new, antique look in paneling.

Introducing Renaissance™ hardwood plywood wall paneling from Georgia-Pacific. It comes in six warm shades of real hardwood face veneer, each flecked and shadowed. With a finish that looks handrubbed. Renaissance paneling. A new old-fashioned look, at old-fashioned prices.

For more information, just contact your G-P representative. Or, if you'd like a free 12″ x 6″ paneling sample of new Renaissance, wire a Night Letter collect: Georgia-Pacific, Instant Sample MA, Portland, Oregon 97204.

Georgia-Pacific

Portland, Oregon 97204

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Ask Maintenance Manager Mallard

Our Pitt-Glaze® Coating System Tackles Tough Printing Ink— Keeps Maintenance Costs Down

PPG INDUSTRIES

At the Charlotte News and Observer—morning and evening newspapers of the Knight Publishing Company, Charlotte, North Carolina—Gordon Mallard, Jr. needed a coating that would fight the ravages of printing ink, keep his maintenance costs down and make a show place out of the various interior areas of the publishing company's new building. The answer was the polyester-epoxy *Pitt-Glaze* Coating System—the hard, tile-like finish that even stubborn printing ink won't stain.

A *Pitt-Glaze* ivory colored glossy finish was applied on the walls, pillars and ceilings in such hard-use areas as the press room, the colored ink mixing room, the washrooms, stairwells and cafeteria.

As Mr. Mallard describes the results, "printing ink catches paper dust during the printing and folding operations, causing the dust to cling to walls and the ceiling. Since the *Pitt-Glaze* Coating surface is smooth and monolithic, it does not attract the dust and dirt as much as do walls painted with conventional paints. Printing ink hand prints and smudges are easily washed off the *Pitt-Glaze* finish, leaving it clean and glossy." Visitors have proclaimed his press room, "the cleanest ever seen."

If our *Pitt-Glaze* Coating System can make Mr. Mallard's press room "shine and sparkle," think what it can do to those stubborn stains that dull your day and play havoc with your maintenance costs.

There's informative, descriptive literature available with no obligation. Write *Pitt-Glaze* Coating, PPG Industries, One Gateway Center, 3W, Pittsburgh, Pa. 15222.

PPG: *A Concern for the Future*

PITTSBURGH® PAINTS

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For more data, circle 81 on inquiry card

Top Brass

Customized Keys for Russwin doorware.
A tasteful touch of distinctive identity
for your staff and your buildings.
Enduring design in the Russwin tradition.
Russwin, Division of Emhart Corporation,
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RUSSWIN®

The Collector's Series by Russwin

BARK TILE SHAKES

when your design calls for a flat shingle with a bold texture.

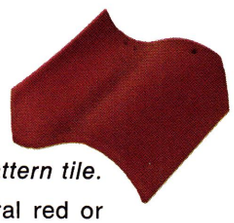
Bark Tile Shakes reproduce the look of deeply ridged tree-bark, the mellow color of aged cedar . . . and they are *permanently fire-proof*. Their heavy, irregular butt-line emphasizes the rough-hewn appearance and texture. Interlocking Bark Tile Shakes are weather-proof and decay-proof . . . assuring long years of roof-beauty for all types of structures: homes, churches, schools, institutions, commercial and public buildings.

Ludowici has two outstanding NEW Tiles *for permanent roof-beauty.*

CASA RANCHO

One-Piece-Mission

when your design demands a massive roll-pattern tile.

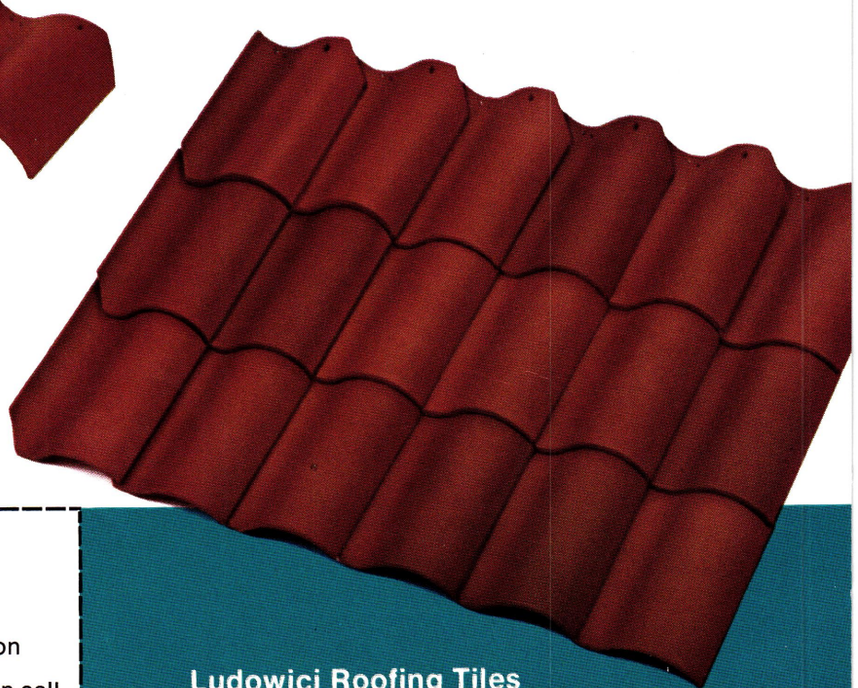


The beauty of Casa Rancho Tile, in natural red or fireflashed Granada Red, is time-defying . . . impervious to fire, weather and decay.

The large size of Casa Rancho Tiles assures substantial savings on labor costs. Only 93* pieces per square means less installation man-hours.

When a building requires a Spanish or Mission type of roof, and cost is a factor, Casa Rancho is the answer.

*West Coast Standard—89 pieces per square



Consult your local distributor or mail coupon.

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Please send me names of your distributors and more information on

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Ludowici Roofing Tiles almost always outlast the buildings they beautify.

For additional information about Ludowici Roofing Tiles, see the 1972 Sweet's Catalog #7.6/Lu.

THE EDITORS OF ARCHITECTURAL RECORD INVITE SUBMISSIONS FOR...

1 RECORD INTERIORS

to be featured in the January 1973 issue

. . . a program to recognize outstanding interiors designed by architects

Museum Bookstore, San Francisco, Calif., Architects: Robinson & Mills, Morley Baer photo

In 1970, in response to the upsurge of activity and interest in design of interiors by architects, ARCHITECTURAL RECORD established a new editorial program—RECORD INTERIORS.

Recently completed architect-designed interiors of all building types will be considered—remodelings and renovations as well as new structures—anywhere in the United States. Selections will be made by the editors on the basis of the excellence of the design solution for the particular client's individual program. Submissions from architects of new, unpublished work will be welcomed through October 15, 1972. No formal presentations are required, though materials submitted should include plan, photographs or snapshots, and brief description and program. RECORD INTERIORS of 1973 will be published in the January 1973 issue of ARCHITECTURAL RECORD.

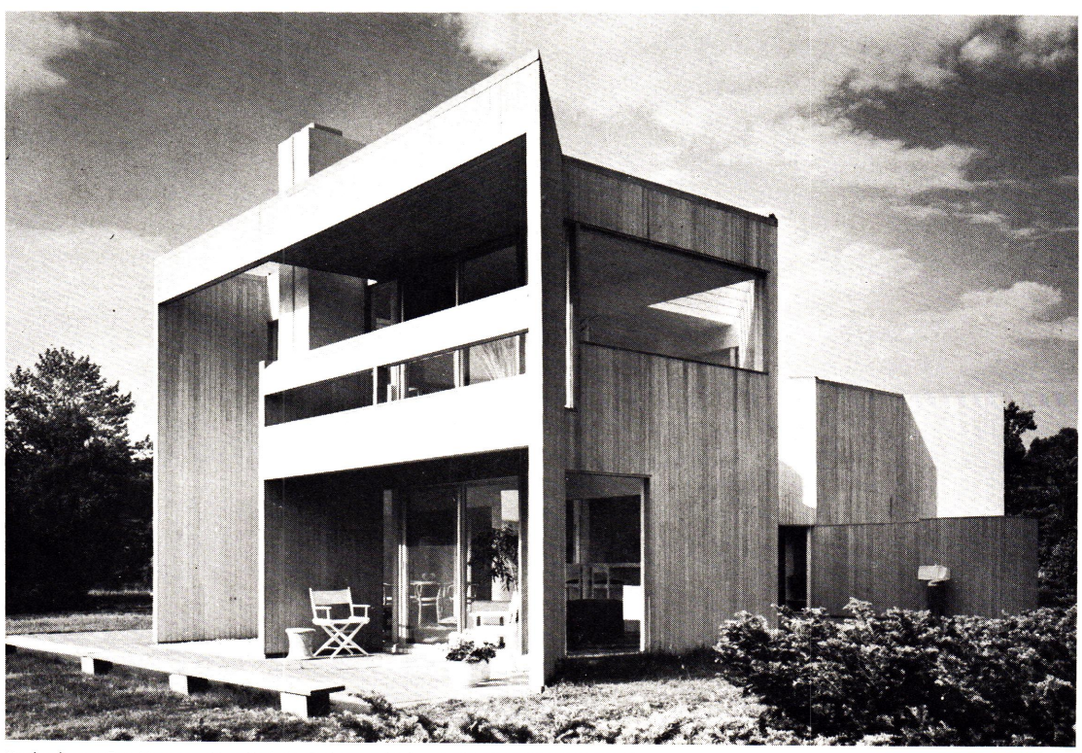
Write or telephone:
Barclay Gordon, Editor-in-Charge
Interior Design Awards Program
ARCHITECTURAL RECORD
1221 Avenue of the Americas
New York, New York 10020
tel: (212) 997-3450

2 RECORD HOUSES AND APARTMENTS

for the 1973 Mid-May issue

Every architect registered in the United States may submit material for consideration in RECORD HOUSES and Apartments of 1973. Single-family houses and multi-family buildings that represent today's wide variety of design approaches will be featured in the eighteenth issue of the magazine. Include the following: 6 to 10 clear informal photographs, black-and-white preferred, fully describing the architectural intent, both on the exterior and the interior (35 mm. slides must be in 8½ x 11 in. clear envelopes); relevant plans and sections (not working drawings); and a descriptive sheet including the architect's name and location of building. Do not send originals or other material which must be returned before the issue appears. The deadline is October 15, 1972.

Send material to:
James D. Morgan
ARCHITECTURAL RECORD
1221 Avenue of the Americas
New York City 10020



Kaplan house, East Hampton, New York; by Barbara and Julian Neski, photo by William Maris

Wellco® Carpet of Herculon® just netted some Deer Isle Sardines

...and tossed 'em back.

One thing that Wellco's rugged "Incredible" carpet of HERCULON* olefin fiber didn't need was a fresh catch. Even one as good as Deer Isle Sardines. But, that's what it got . . . soaked with oil. It all cleaned up, though, quick and easy.

The stain resistance of HERCULON coupled with uncommon resistance to abrasion and fading, gives you the ideal carpet for any commercial installation. Deer Isle Sardines didn't stick with Wellco's "Incredible" carpet. But your clients will. Because this Wellco level loop tufted carpet is made with pile of spun yarn of HERCULON.

For detailed information on HERCULON olefin fiber see Sweets (S) Light Construction, Architectural, Interior Design files. Or, write Fibers Merchandising Dept. 200, Hercules Incorporated, Wilmington, Delaware 19899 for free 24 page booklet.

Specify carpet of Herculon® by Wellco®

HERCULES

*Hercules registered trademark

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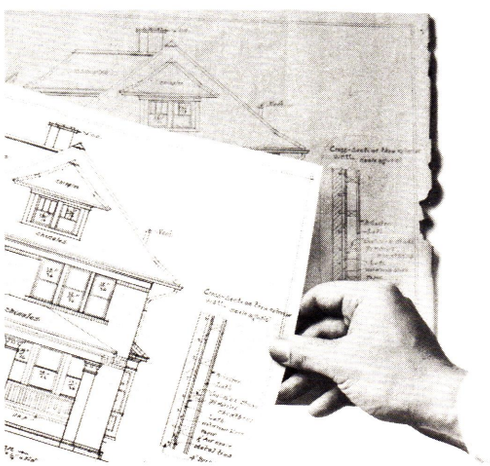
"RETRACING OLD DRAWINGS IS SUCH A DRAG."



There's really no reason to waste time retracing those old, battered drawings. A much better way is to rejuvenate them by making sharp, clean photographic restorations on Kodagraph film.

You'll be amazed at the results. Weak lines come back strong and clear. Stains virtually disappear. And instead of gray on yellow, you've got sparkling, contrasty, black-on-white prints. Best of all, you not only eliminate drafting time, you save money, too.

For a full, clear picture of all the ways Kodagraph films can offer creative solutions to your drawing problems, send in the coupon.

Save hours of drafting time with KODAGRAPH Films.

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DRAWING REPRODUCTION SYSTEMS

Kodak

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OWNER: Missouri Botanical Garden
ARCHITECT: Helmuth, Obata & Kassabaum, Inc., St. Louis
BUILDING CONTRACTOR: Hercules Construction Co., St. Louis
GLAZING CONTRACTOR: Gateway Glass Div. of H. H. Robertson Companies, St. Louis

LOF presents Missouri

The architects who designed the library in the middle of the Missouri Botanical Garden weren't about to improve on nature. So they did the next best thing: presented a mirrored image of it, reflected in LOF Vari-Tran® . . . the looking glass.

The rare and beautiful trees, flowers and landscaping were an ideal environment for Vari-Tran. The library blends unobtrusively into this pastoral oasis set in the middle of the city.

While it's reflecting the beauty of the surrounding greenery, Vari-Tran is doing something even more important: cutting down on the energy needed to heat and cool the new library.

By reducing solar heat gain, Vari-Tran minimizes the need for extensive air conditioning equipment, as well as the energy needed to run that equipment.

Botanical Garden through the looking glass.

And since it's fabricated into Thermopane® units, the Vari-Tran for this building also reduces the amount of energy required to run the heating system.

LOF Vari-Tran. The looking glass that's making a name for itself as an energy conserver. For a copy of our new booklet, "Reach for a Rainbow", write Libbey-Owens-Ford, Dept. R-972, 811 Madison Ave., Toledo, Ohio 43695.

Making progress in architecture

LOF

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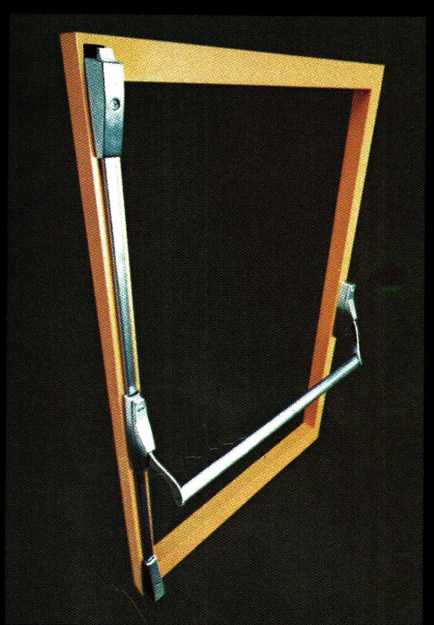
EXIT



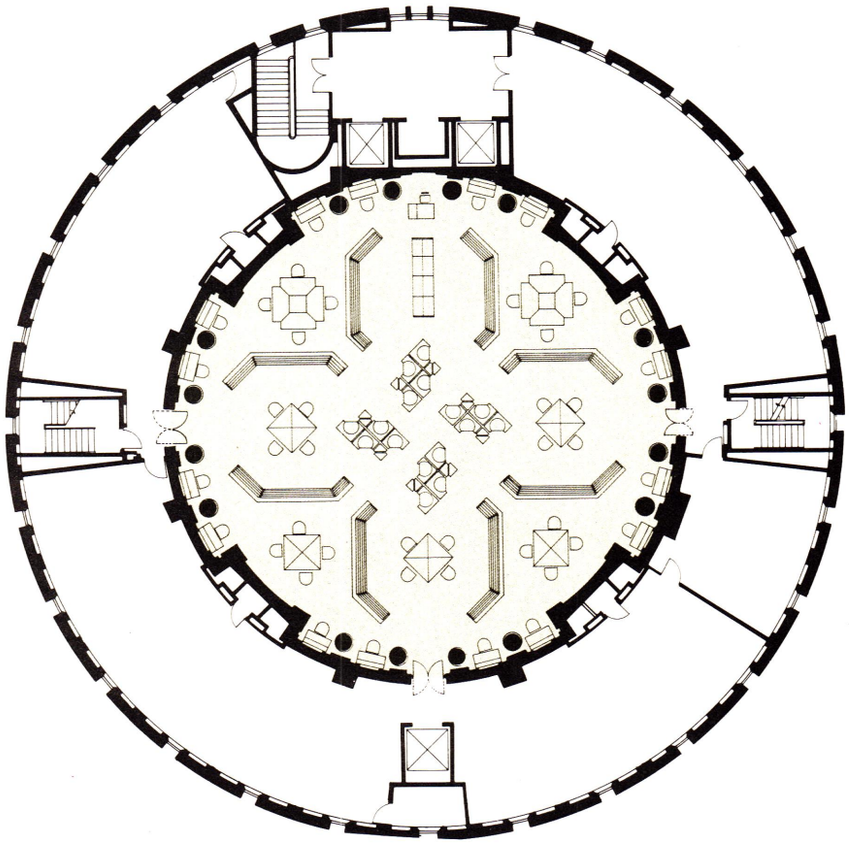
Enter the Corbin Vertical Rod Exit Device. Double-bolted, dashing. Lean. A graceful oval crossbar for greater strength against stress. A touch of art to match your architecture. And a touch of ease: fingertip operation when the rush is on. An instant opener, yet a real grabber when it's locked. Corbin is a master at this device. We'll show you the way out of conformity, into a whole new world of solid hardware innovations. Get in touch with a Corbin distributor, or write us direct.

CORBIN®

The Security Analysts.

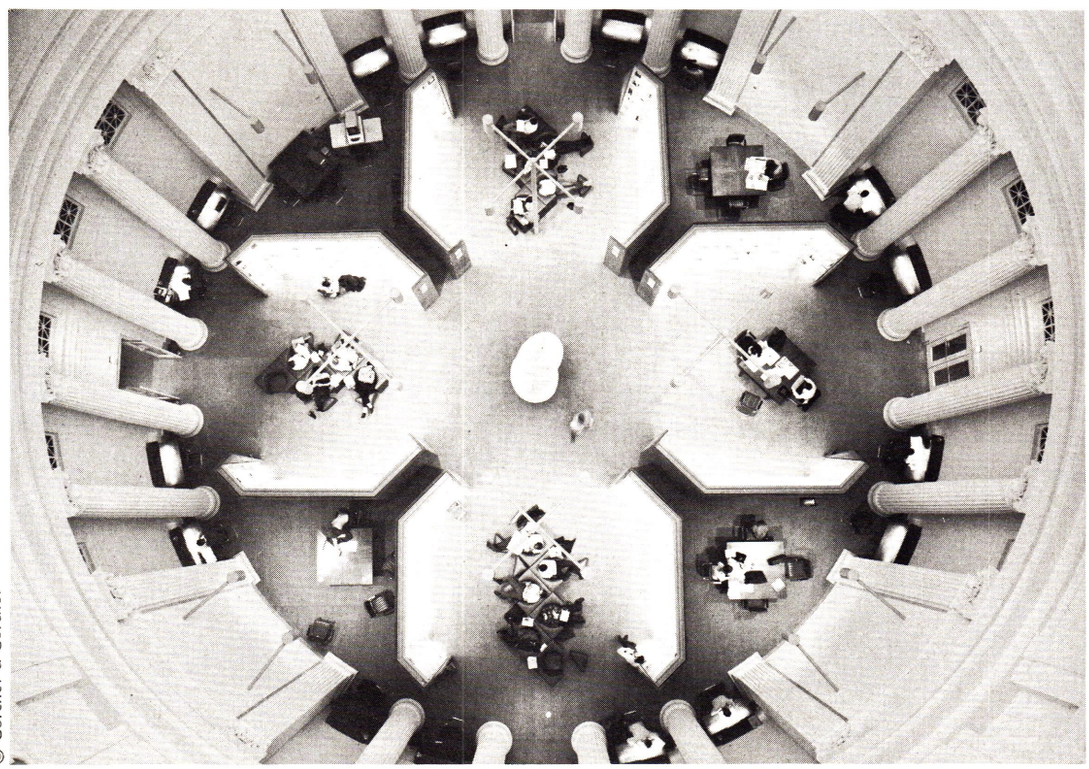
For information write P & F Corbin, Division of Emhart Corporation, Berlin, Conn. 06037. In Canada, Corbin Lock Division.

For more data, circle 86 on inquiry card



A NEW GEOMETRY FOR THE LIBRARY INSIDE THE NEO-CLASSIC DOME AT MIT

MIT's long-range campus plan calls for concentration of instructional, research and administrative facilities. One result of this program has been extensive remodeling for greater intensity of use. SOM's reconstruction of MIT's engineering library to accommodate this policy was a unique challenge because of the beauty and symbolic importance of the dome in which it is housed.



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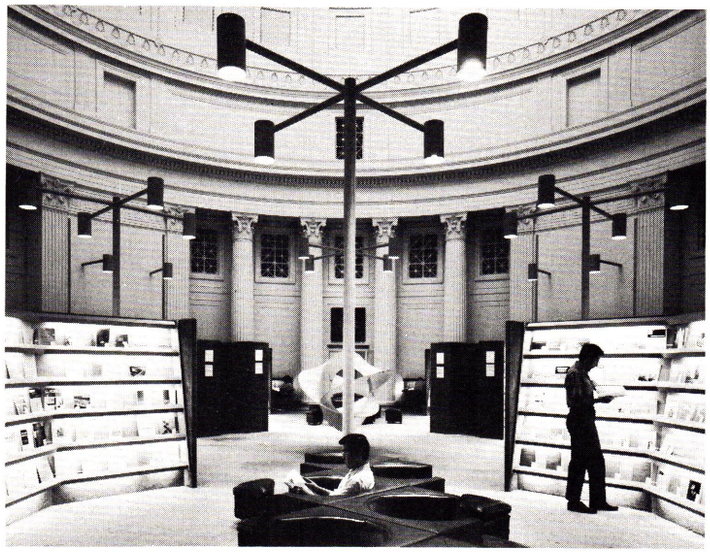
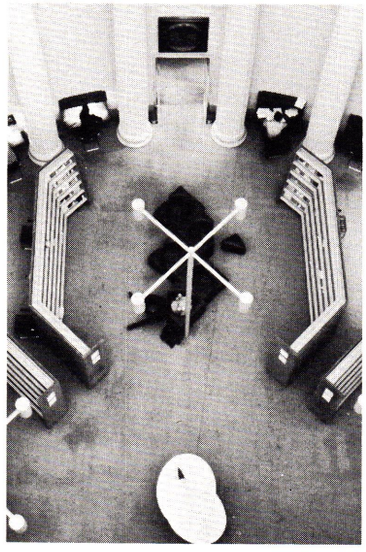
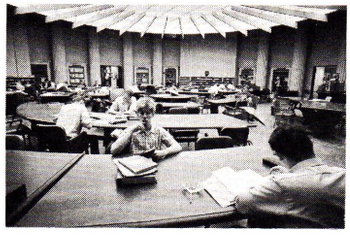




Wayne Soverns Jr. photos except as noted

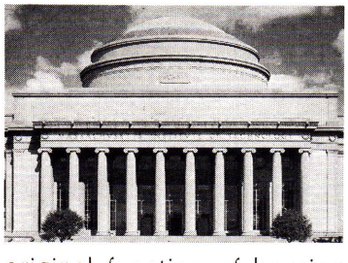
J. Ph. Charbonnier



A challenge for Walter Netsch

The Massachusetts Institute of Technology dome is an imposing landmark, as seen from the principal entrance facade (below). Designed by Welles Bosworth in 1916 as part of his scheme for the neo-classic East Campus, it has long been the crown of the reading room of MIT's engineering library.

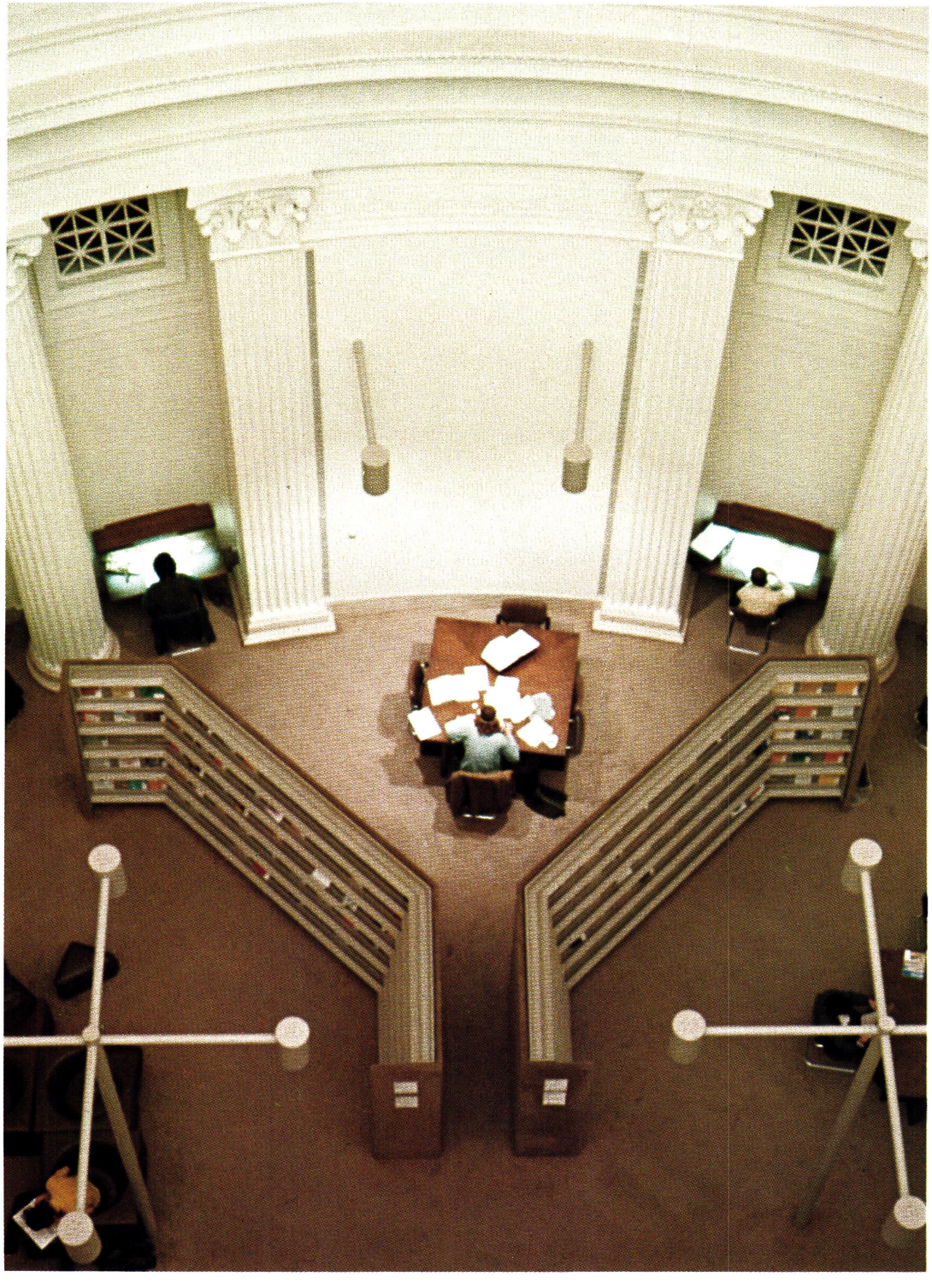
The library interior has recently been remodeled by Walter Netsch of SOM. Netsch has successfully juxtaposed his own geometry, based upon an intricate system of intersecting diagonals, with the classic form of the dome's interior. By this means, he has produced eight clearly articulated reading areas plus an additional study space at the center. The outer ring of the dome has been remodeled to more efficiently continue its



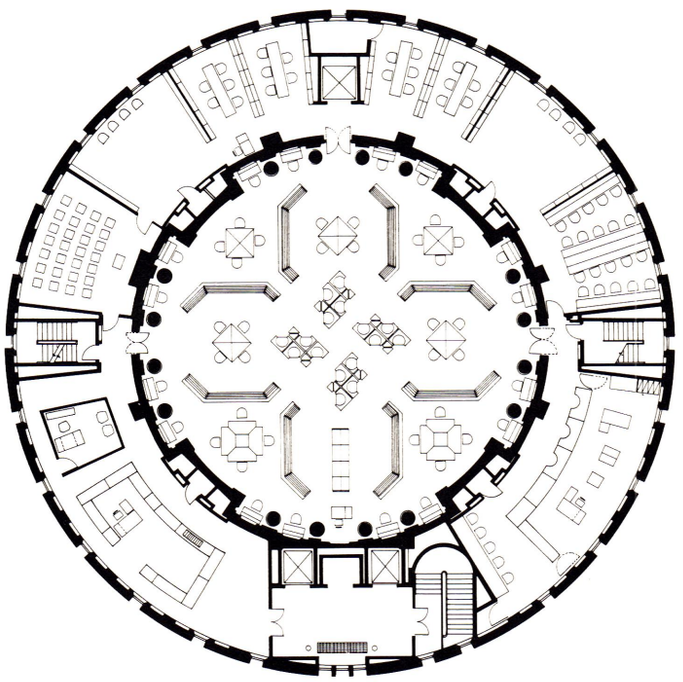
Courtesy MIT

original function of housing stacks, research areas and administrative spaces, and to accommodate the new computer hardware developed as part of MIT's so-called Project Intrex. The latter is a new form of information transfer designed to handle the growing collection.

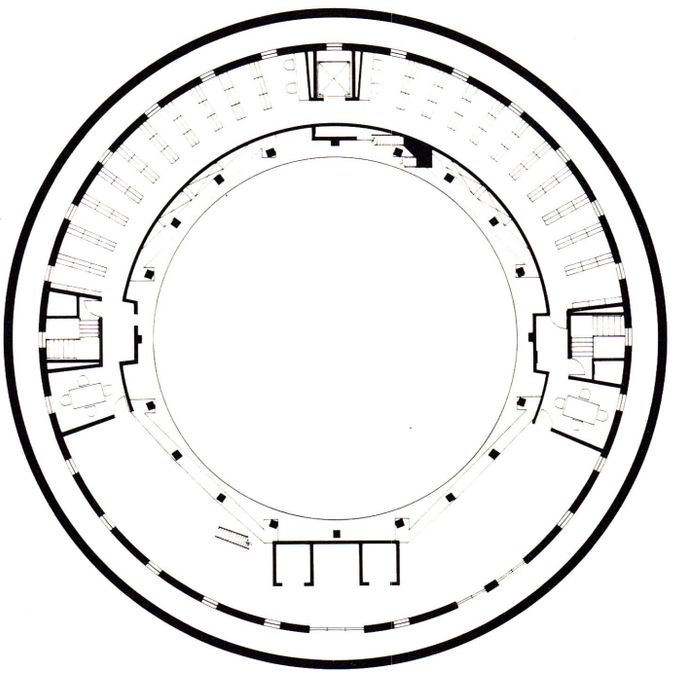
The library as a whole has been conceived as a flexible unit. The division between its traditional library functions—browsing, study and research—and its sophisticated, computerized information retrieval system has deliberately been made imperceptible.



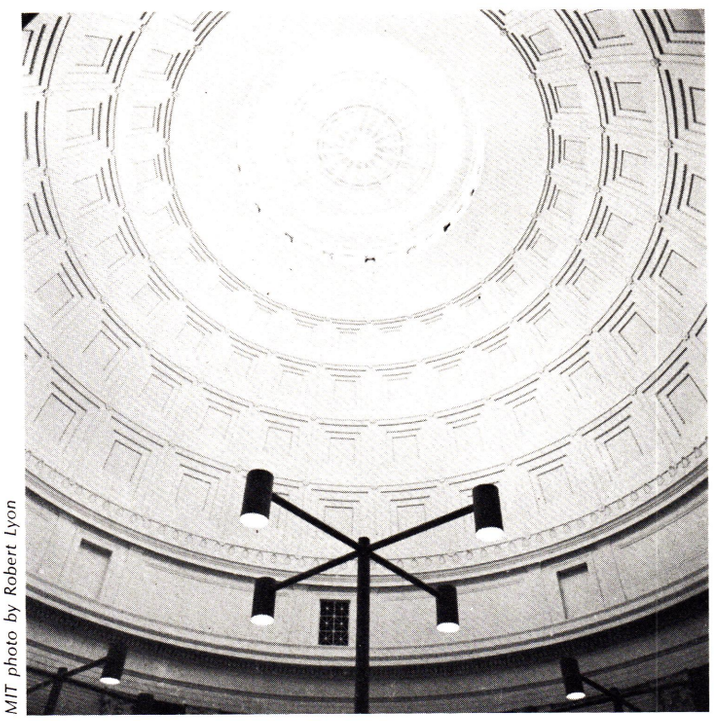
For many years the interior of the MIT dome was hidden by a suspended luminous ceiling of corrugated translucent plastic lit by fluorescents. A product of an era noted for destructive remodeling in the name of function, this ceiling was hung just below the column capitals. In addition to ruining the room as a space (opposite page far left), it created a harsh and unpleasant glare. Netsch's first decision was to remove the suspended ceiling and expose the dome once more. This called for extensive restoration of the dome and its moldings. The oculus, formerly translucent, was made opaque and powerful lights were placed around its perimeter as part of a cross-lighting system designed to emphasize the shape of the dome. The pole-supported lighting fixtures also illuminate the dome transforming it into a reflecting surface. These light trees illuminate the working surfaces as well. The carrel lighting, highlighting of the publication racks and supplementary local lighting was carefully studied. Walls, columns and the dome ceiling were painted white to further brighten the room.



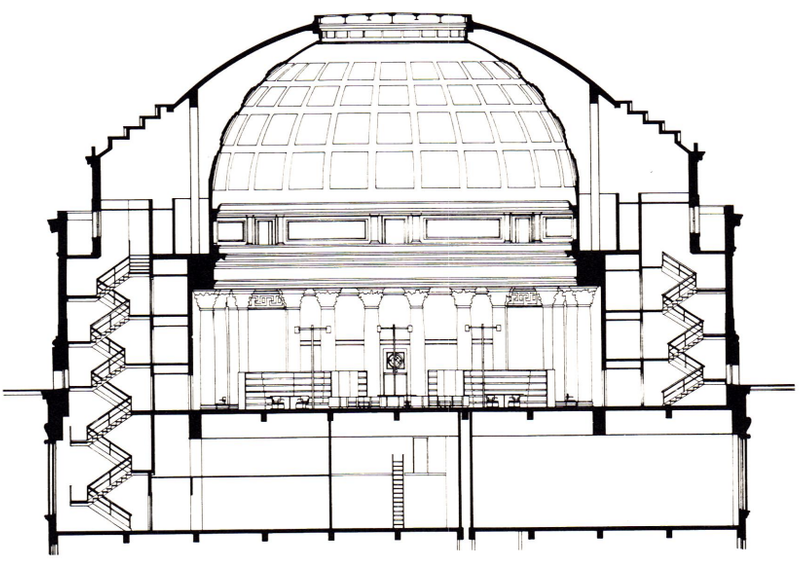
FIFTH FLOOR



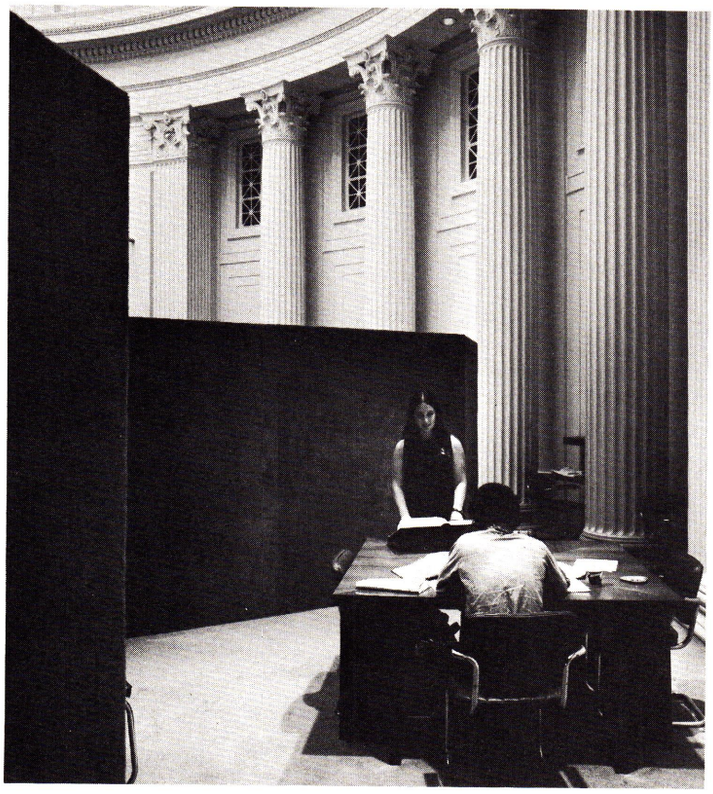
EIGHTH FLOOR

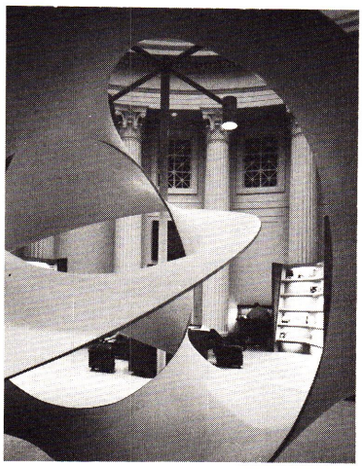


MIT photo by Robert Lyon



EAST-WEST SECTION

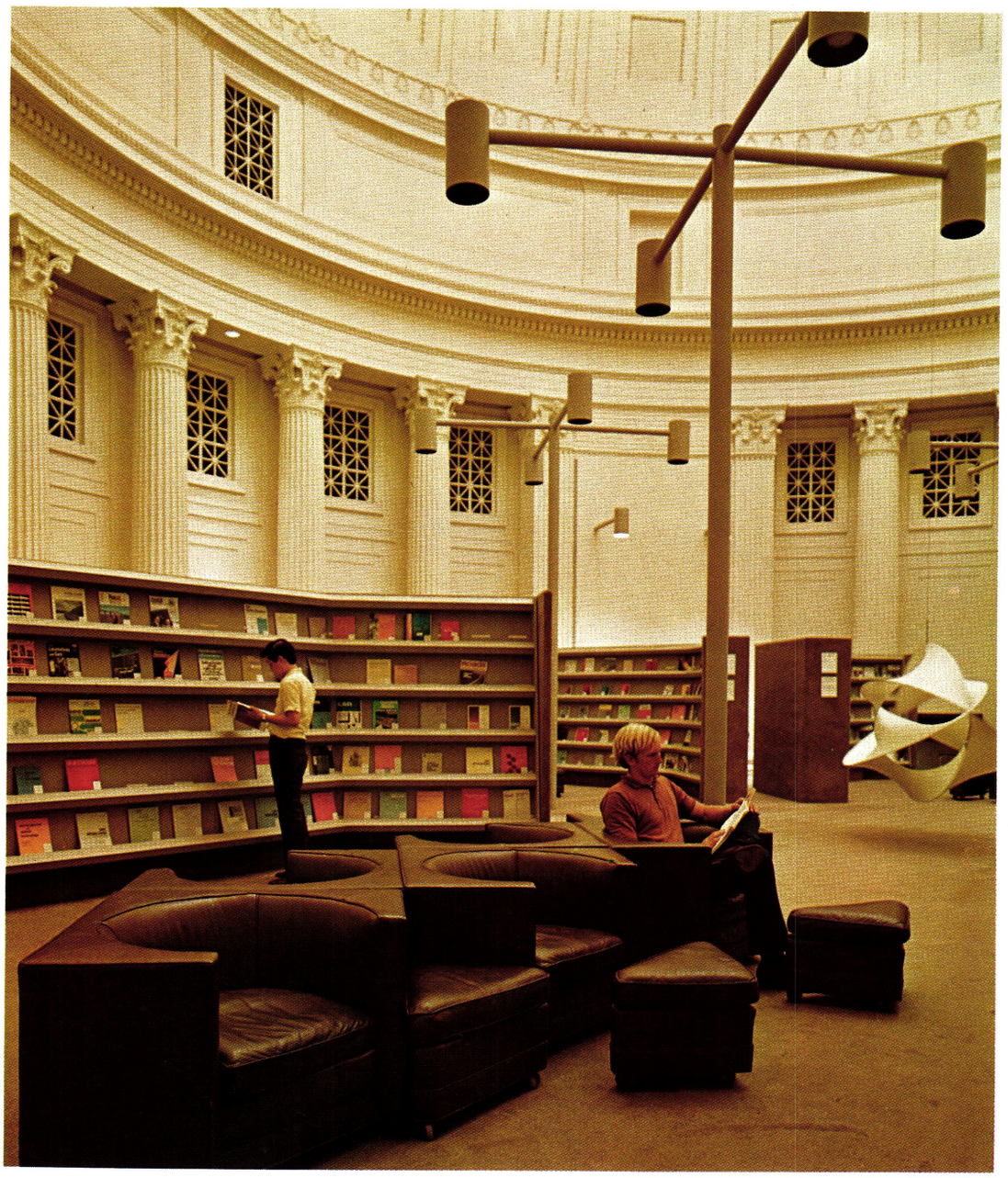




The unyielding and unwieldy total geometry of the dome gave Netsch more repititious concentric circles and truncated pie-shapes to work with than he would have chosen, and there were other problems. The library had to be open and in operation during the entire reconstruction project; the dome though beautiful, possesses construction oddities that could not be ignored, altered or circumvented; and the remodeling budget was limited. Netsch had to achieve his effects by essentially non-structural means—furniture design and placement, redesigned lighting and acoustics, selection of sculpture, plants and color.

How the library functions

The plan concentrates two major working areas for greater user efficiency. Nearly all requirements for searching or browsing are on the fifth floor at the entrance level. Here, in addition to circulation and reference services, are facilities for literature search, computer controlled literature search, current journals, and individual study spaces at carrels, tables or in lounge chairs. Staff members' offices and work areas are chiefly on the fourth floor—out of the sight and sound of users.



THE JAMES MADISON BARKER ENGINEERING LIBRARY, Massachusetts Institute of Technology, Cambridge, Massachusetts. Architects for the interiors: *Skidmore, Owings & Merrill —Walter Netsch, partner-in-charge;* Project Intrex staff: *Dr. Carl Overage and Charles Stevens;* hardware development: *MIT Electronic Systems Laboratory;* acoustics: *Bolt, Beranek and Newman;* lighting: *William Lam;* general contractor: *Fuller Construction Company.*

From the beginning, the library was a hard, reverberant space. Originally the dome itself was blamed for the poor acoustics and this belief helped justify the installation of the suspended luminous ceiling which Netsch removed. At the time of the current remodeling, however, Bolt, Beranek and Newman, the acoustical consultants, persuaded MIT that the hard plaster walls and terrazzo floor were the cause of the difficulty. Excessive noise and echo have now been absorbed by the use of carpet on the backs of the free-standing periodical racks (opposite page top) as well as on the floor. Although the acousticians did not think it necessary, sound absorbent panels were placed within the smallest rectangle of each of the dome coffers. The chairs (below) were designed by Vasarely. The suspended, mobile, cast-aluminum sculpture (below and opposite page) is by Robert Engman. It was donated to MIT by art collector Netsch. Both chairs and mobile are combinations of circles and are thus appropriate forms for a domed room.

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The library equipment shown below was designed by SOM to serve the traditional library functions. The Intrex system has been developed experimentally and the necessary technology is available. So far, however, due to insufficient funding, there has been only a minimal installation of computerized hardware in the library and this is not always operable or available. Eventually the contents of large numbers of books in given fields will be transferred to film and stored in a central time-shared computer. Research will begin at computer terminals which consist of teletypewriters with cathode-ray tubes. At these terminal points which will be located throughout the library, elsewhere on the campus and within the region, scholars will type out their initial inquiries, receive replies on the cathode-ray tube and eventually narrow their search to the point of requesting to read specific books, pages or quotations therefrom, all of which will be flashed on the tube. Computer printouts will be available almost at once. The inclusion of a special duct network within the library will facilitate the future location of computer terminals.

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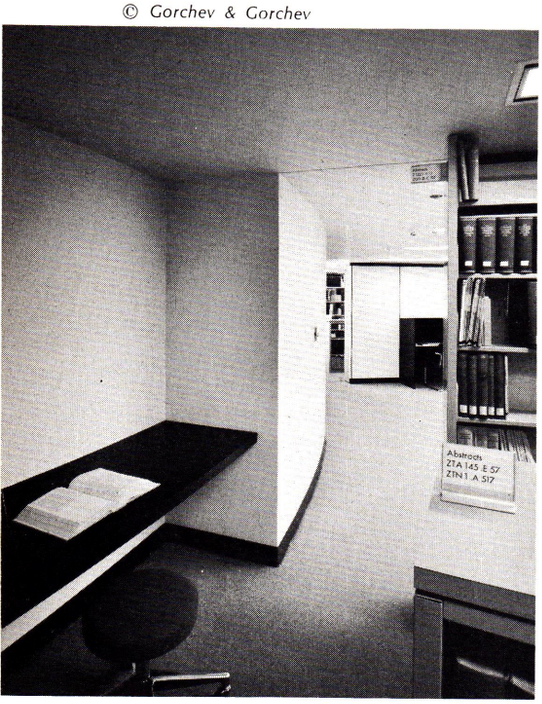

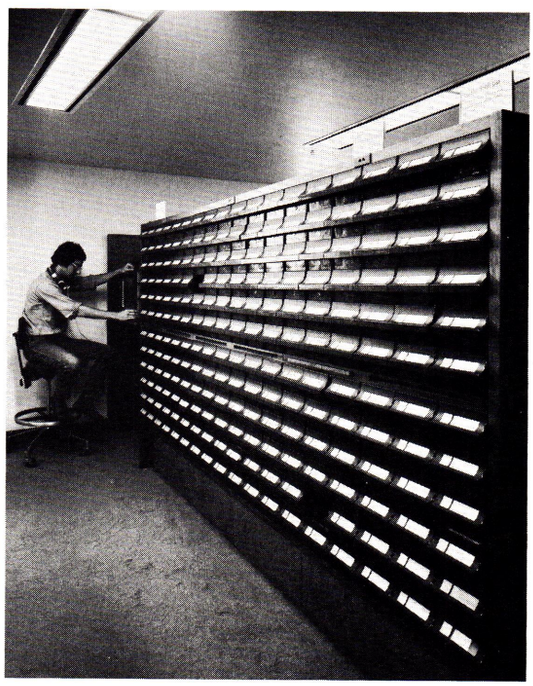

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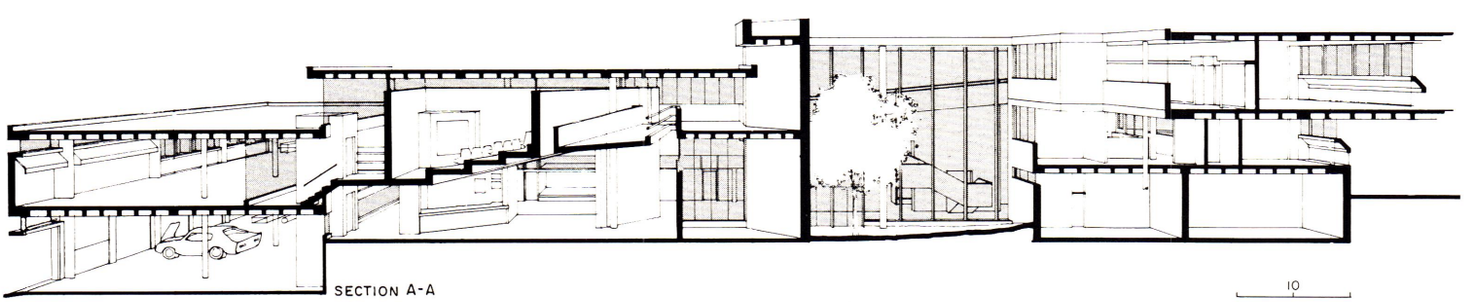
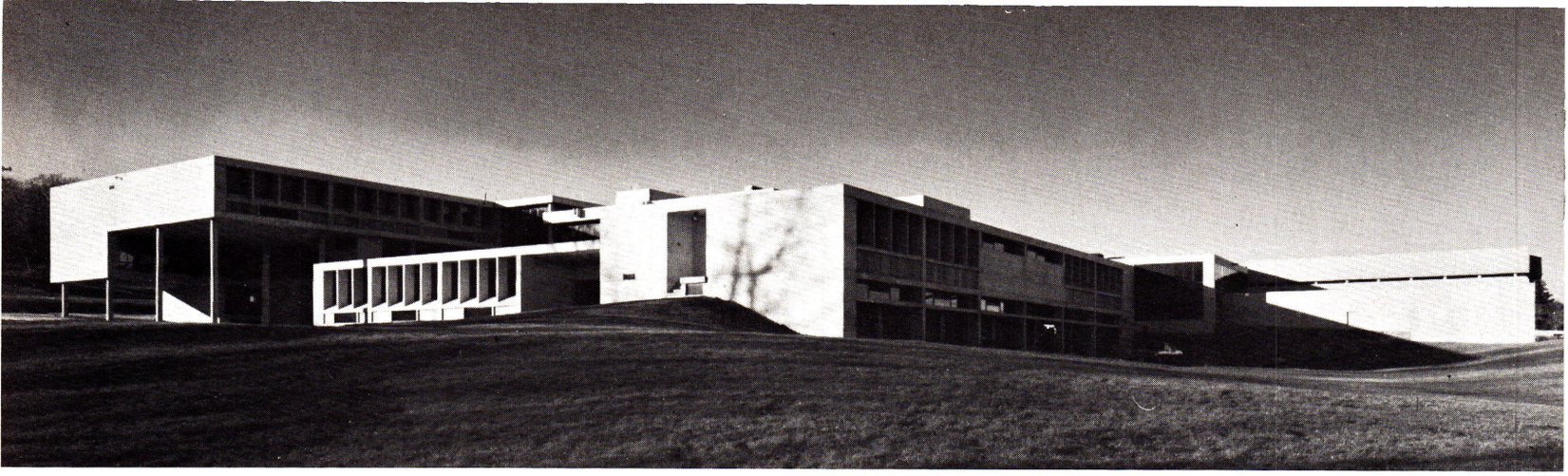
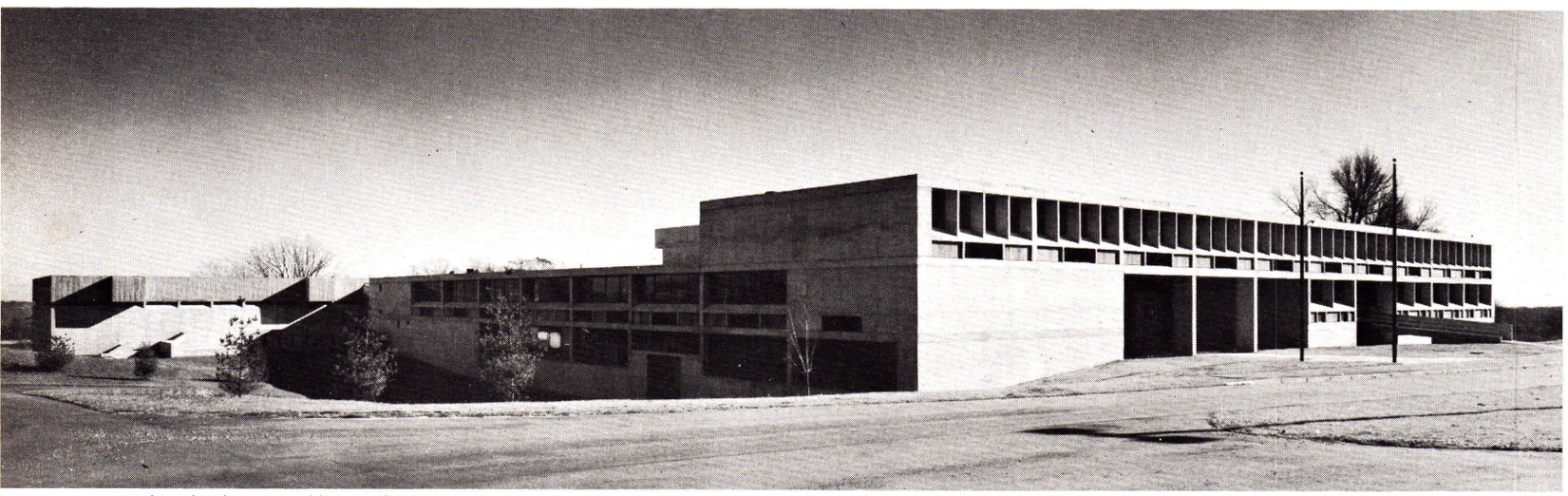
VOCATIONAL EDUCATION IS EVERYBODY'S BUSINESS IN THIS SCHOOL

The William M. Davies High School, as noted in the August ARCHITECTURAL RECORD Building Types Study on new planning approaches for schools, is a bold attempt to give vocational and technical education a dynamic image. Aimed at convincing young people that vocational education need not be second-class education, the building combines operational flexibility, straightforward concrete construction, and a dramatic system of circulation ramps (photo above) to display several modes of technical study at their very best. The coeducational, tenth through twelfth grade school in Lincoln, Rhode Island was designed by The Perkins and Will Partnership in joint venture with Kent Cruise and Partners to accommodate 600 full-time students for high-demand vocations and another 1800 part-time students who take evening and Saturday classes.

Because technical training is especially liable to change these days, adequate flexibility to permit constant revision of curriculum was the principal de-



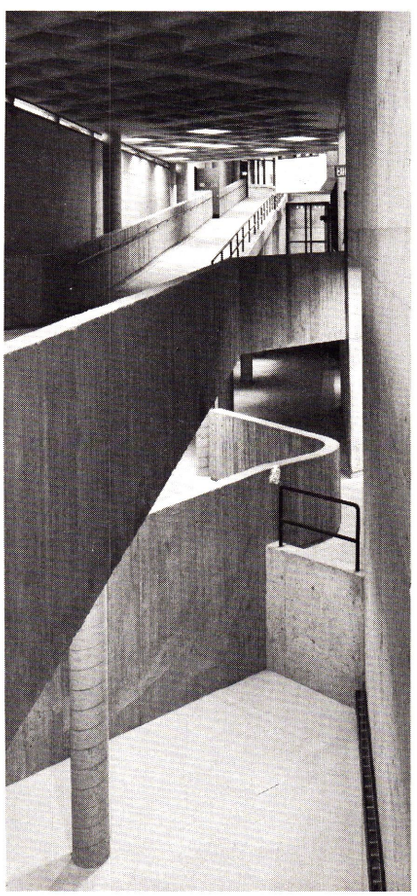


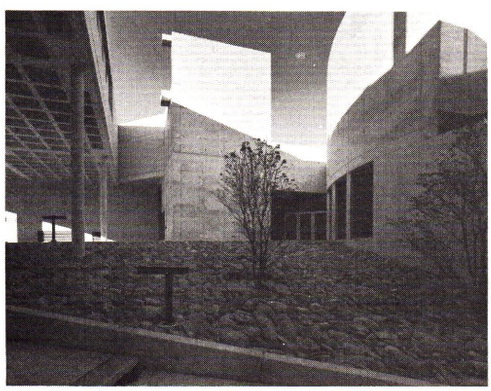


Nathaniel Lieberman/Todd Watts photos

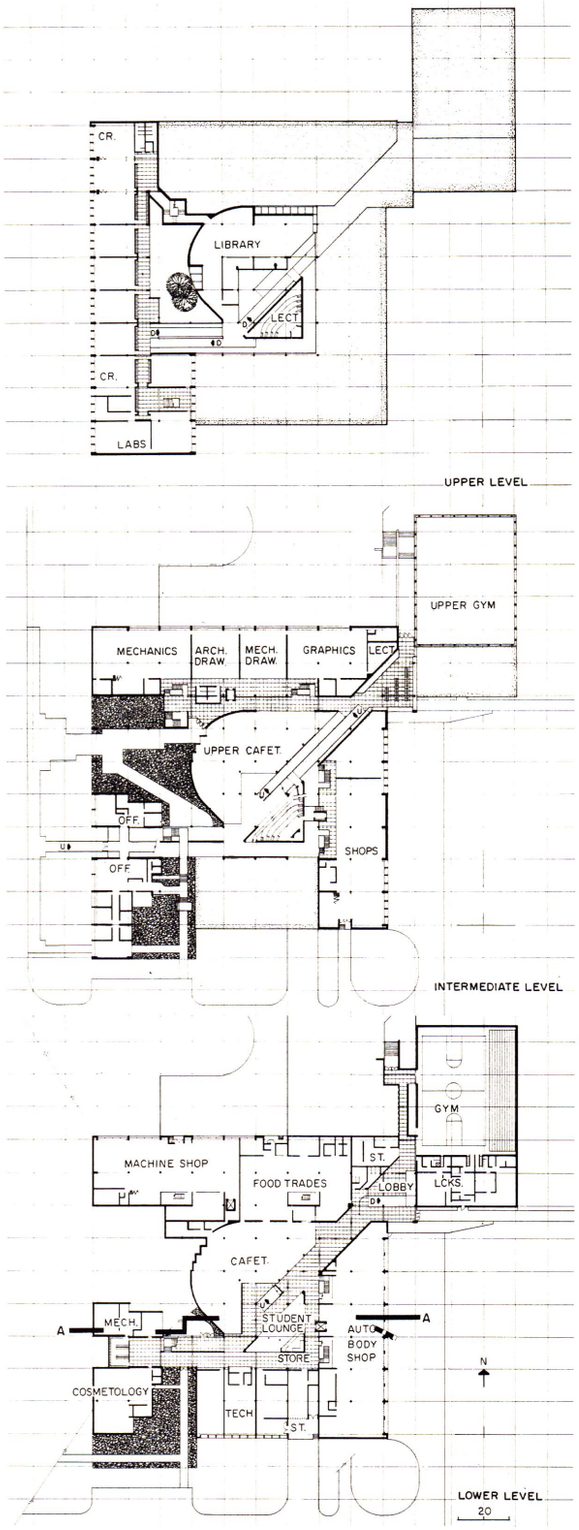
sign criterion. The designers, therefore, chose to group similar facilities and to develop modules which, with minor modification, could serve unexpected future uses. The heavy labs—auto-mechanics and the machine shops—are on the lowest level while the commercial labs, classrooms and administrative areas, much more likely to be changed, are grouped on upper floors. Construction techniques that express the vitality of industry—concrete walls and structure, exposed mechanical equipment (the school is largely air-conditioned) and lighting, as well as industrial-type details—have been exploited.

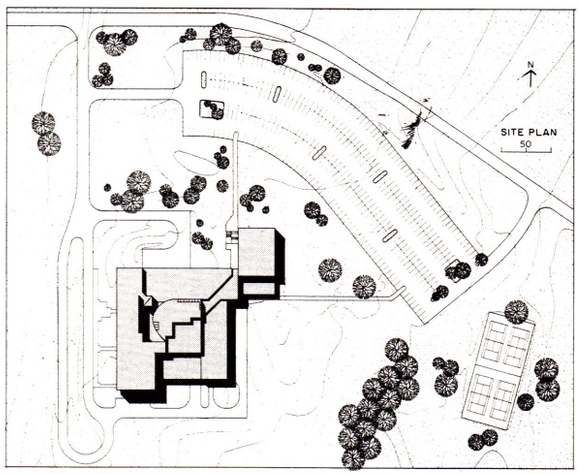
The most intriguing architectural feature, however, is a series of ramps, set diagonally into the building's 25-foot square structural grid. The gently-sloping site (above) encouraged a multi-level scheme and the ramps make good connectors. Furthermore, through generous use of clerestories and glazed interior partitions, the ramps open the volume of the building to changing patterns of light throughout the day (right). It was the intention of the designers that people moving along the ramps and other passages be able to see what's going on in the various labs and workshops. Thus, in a school where classes change relatively infrequently, a sense of liveliness is imparted to the otherwise empty corridors by the activities taking place in the rooms they serve. In this way, an approximation of open planning is achieved in an environment where acoustical considerations do not permit completely continuous spaces.

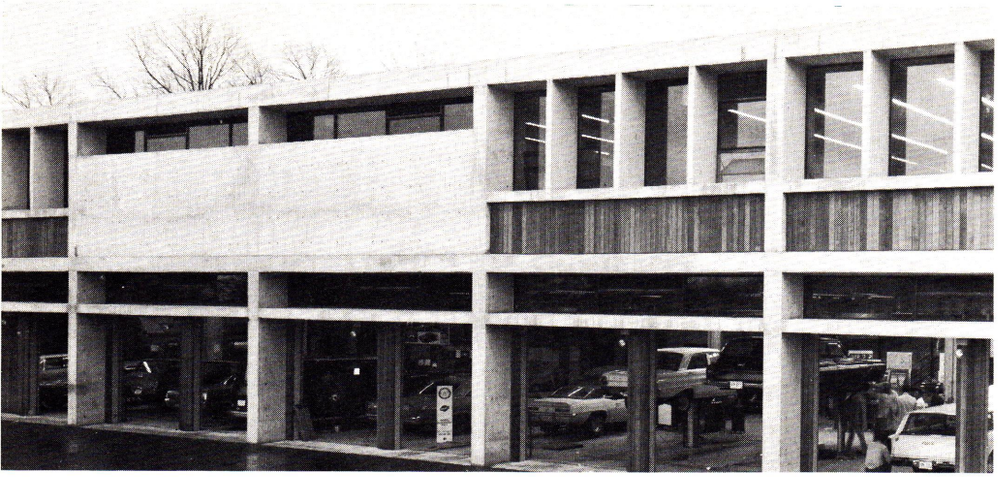


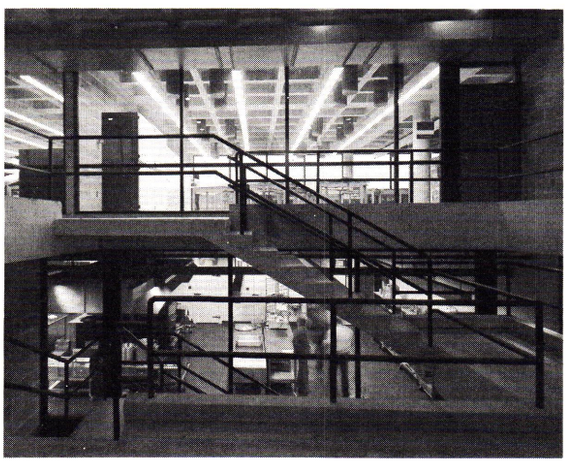


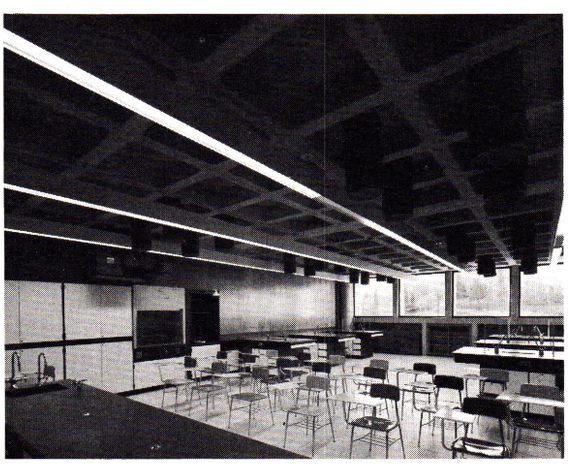
Each of the plans (right) contains sub-levels as the building steps down the slope to the southeast. The diagonal ramps tie major areas together while other ramps and stairways, compensating for varied ceiling heights and special conditions, produce variety.







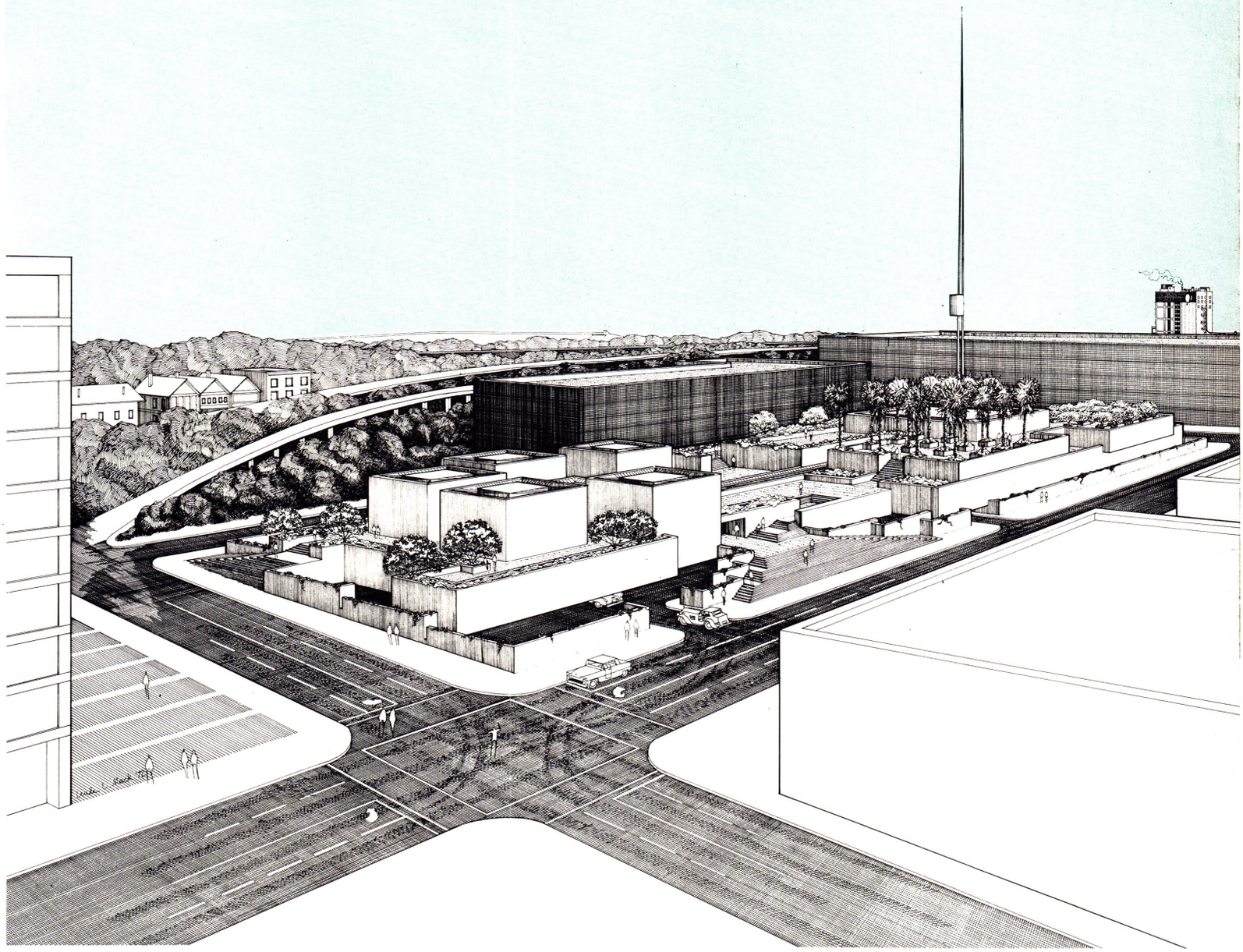




At the heart of the school is a two-story cafeteria with the library above, both of which have windows onto the main ramps. Also at the lowest level is a student lounge and store. Located under a stepped lecture room, it has rich blue carpeting, red accents and special lighting to help attract the students. Other interesting spaces in the building are the auto body shop (above) and the top-floor lecture room (below). From top to bottom (right): a stairway connecting two levels of classrooms with a corridor; the library with glazed walls overlooking the ramp; and a multi-purpose laboratory equipped for chemistry and physics experiments.

WILLIAM M. DAVIES HIGH SCHOOL, Lincoln, Rhode Island. Architects (joint venture): *The Perkins and Will Partnership*, White Plains (*David K. Pyle*, partner-in-charge, *Richard A. Maitland*, designer) and *Kent Cruise and Partners* (*Thomas Sluiter*, partner-in-charge). Engineers: *Kent Cruise and Partners* (structural); *Carvorins and King* (mechanical); *Lloyd A. Wells* (electrical). landscape architect: *A. E. Bye*. cost consultant: *Don Wolf*. general contractor: *Maloney and Rubien Construction Co. Inc.*

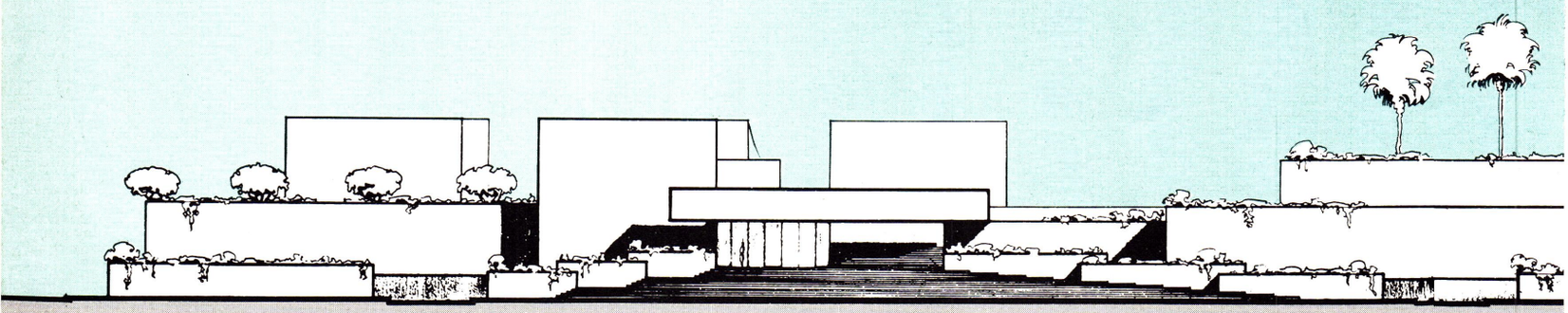
BUILDINGS AS LANDSCAPE: FIVE CURRENT PROJECTS BY WILLIAM MORGAN



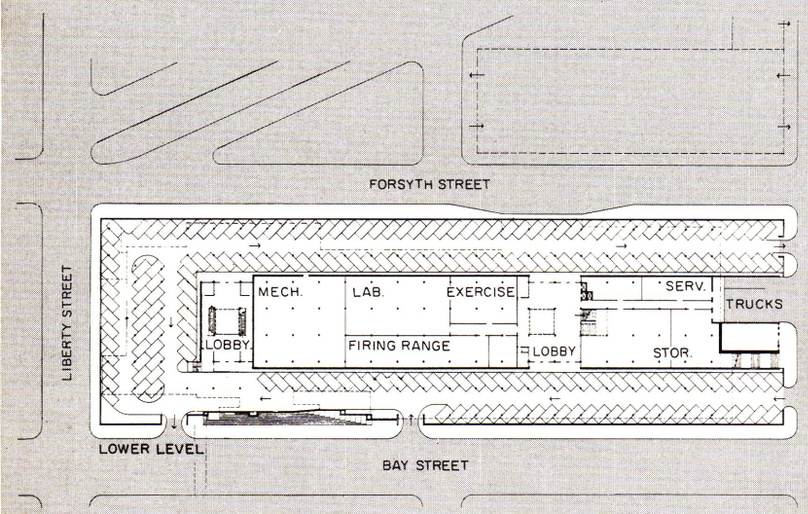
Morgan's interest in earth form architecture, in buildings as landscape, reached its fullest and most forceful expression to date in his design for the Florida State Museum (RECORD, September, 1971). A number of his current projects betray a similar concern for the earth as a powerful element of design and borrow from, or enlarge upon, ideas developed for the museum. In the Jacksonville Police and Courts Facility (above) low roof levels have been organized into a handsome sequence of inviting landscaped terraces and public promenades. In other projects, the earth plane has been shaped to heighten the sense of shelter or to reaffirm—almost allegorically—man's primal relationship with the land.

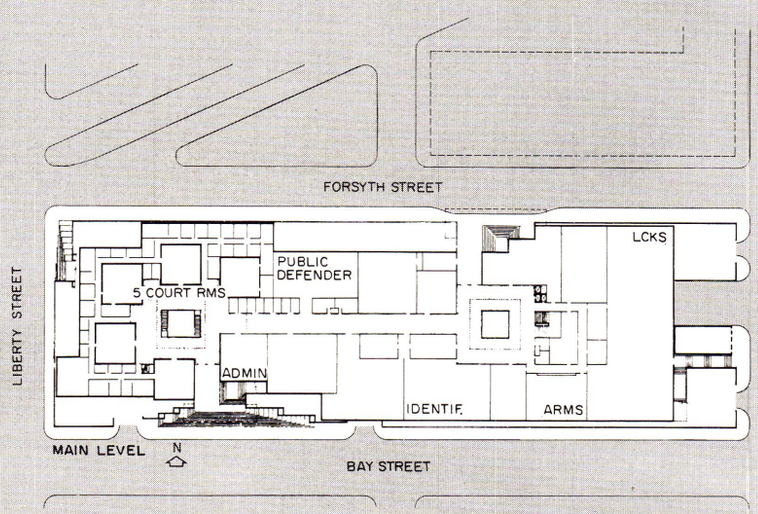
The drawings and projects shown here and on the pages that follow were developed by the members of Morgan's office: John Dyal, Thomas A. McCrary, Linda Mack, Thor Heinrichs, Takeshi Saito and Theodore C. Strater.

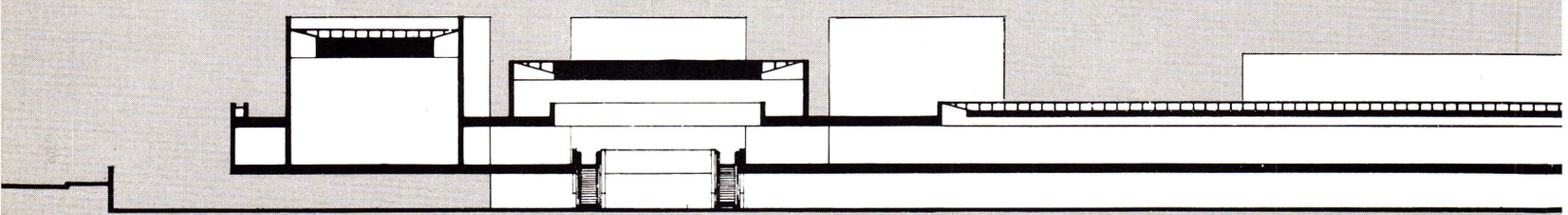
JACKSONVILLE POLICE AND COURTS FACILITY



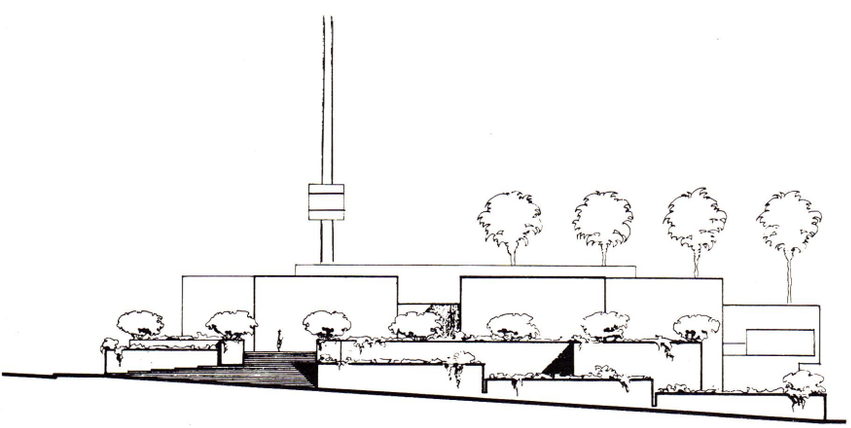
BAY STREET ELEVATION







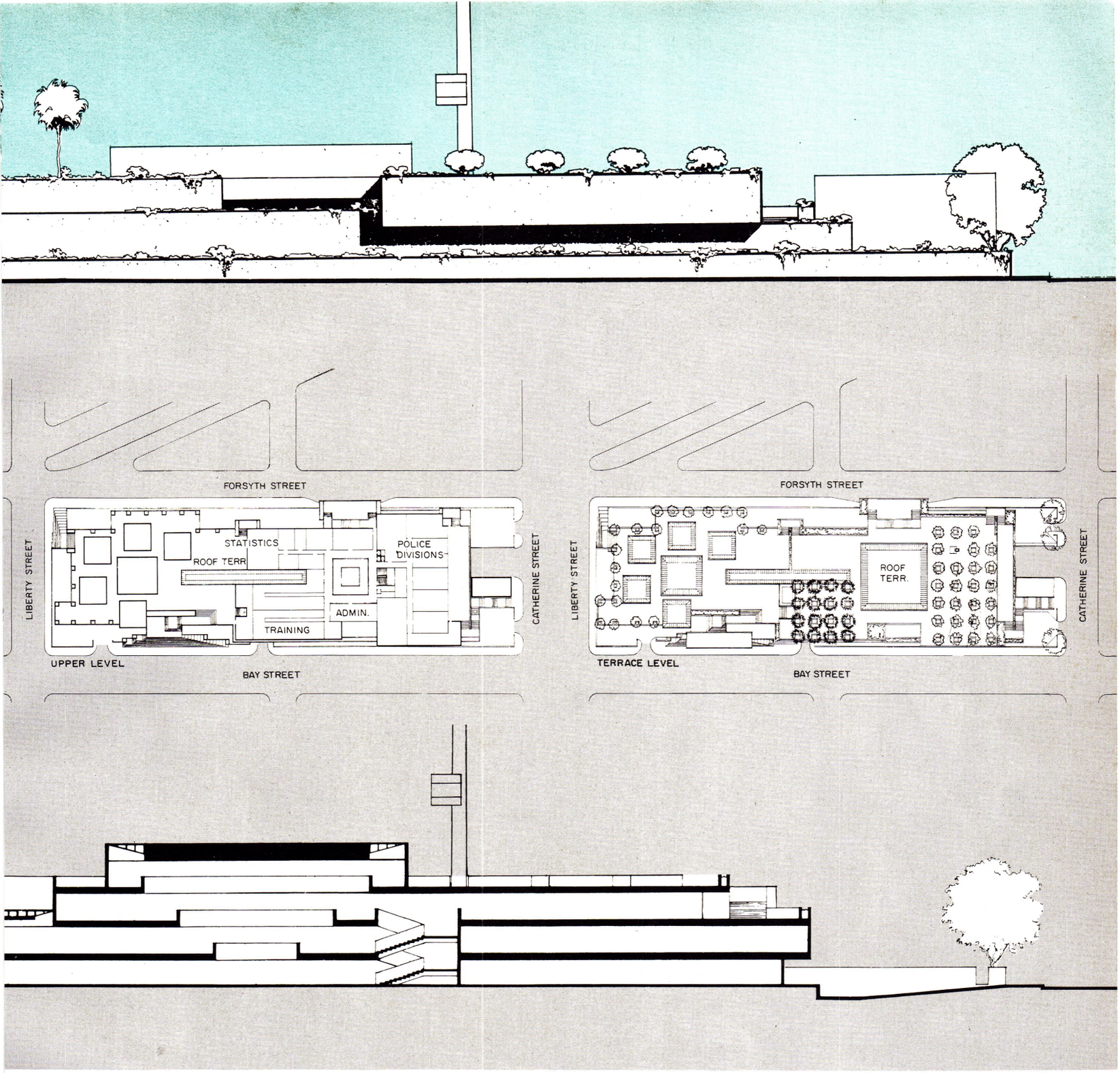
LONGITUDINAL SECTION



LIBERTY STREET ELEVATION

Like many another American city, Jacksonville is committing substantial funds to the renewal of its downtown core, and this new Police and Courts Facility—a commission won by Morgan in a regional AIA competition—is an important part of this renewal effort. The new design will consolidate two important branches of the criminal justice system, in an attempt to coordinate their varied but interdependent functions.

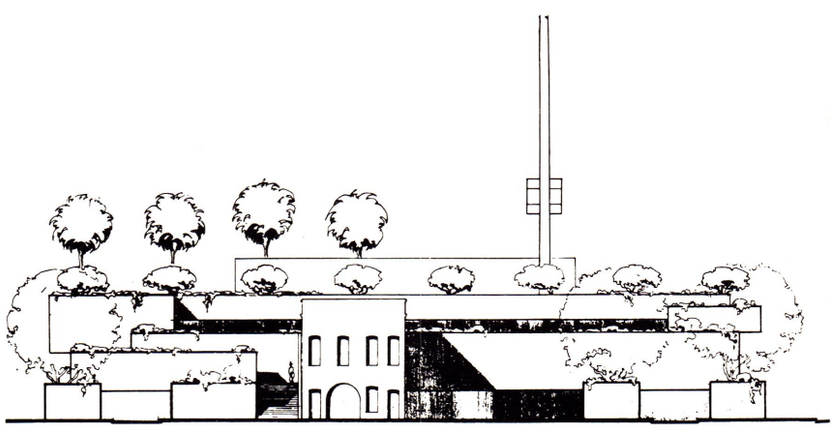
The site is a two-block area, currently under acquisition by the city, that slopes 15 feet from the highest to the lowest corner. For this site, the architects have developed a windowless scheme of strong rectilinear massing that generates considerable compositional interest but retains a low, horizontal silhouette. Five skylighted, double height courtrooms project through the roof terrace at the east end of the site and the stepped arrangement of low structures at the west end serves the police functions. A communications mast dominates the west end and provides the only strongly vertical note. In between is a complex of inter-



locking public plazas and handsomely landscaped roof terraces reached by a flight of broad steps to the south. The masses recede at the entry points, most noticeably at the entry steps, which Morgan characterizes as "stated as unmistakably as the ascent to Persepolis, but resolved in the citizen's scale rather than the autocrat's."

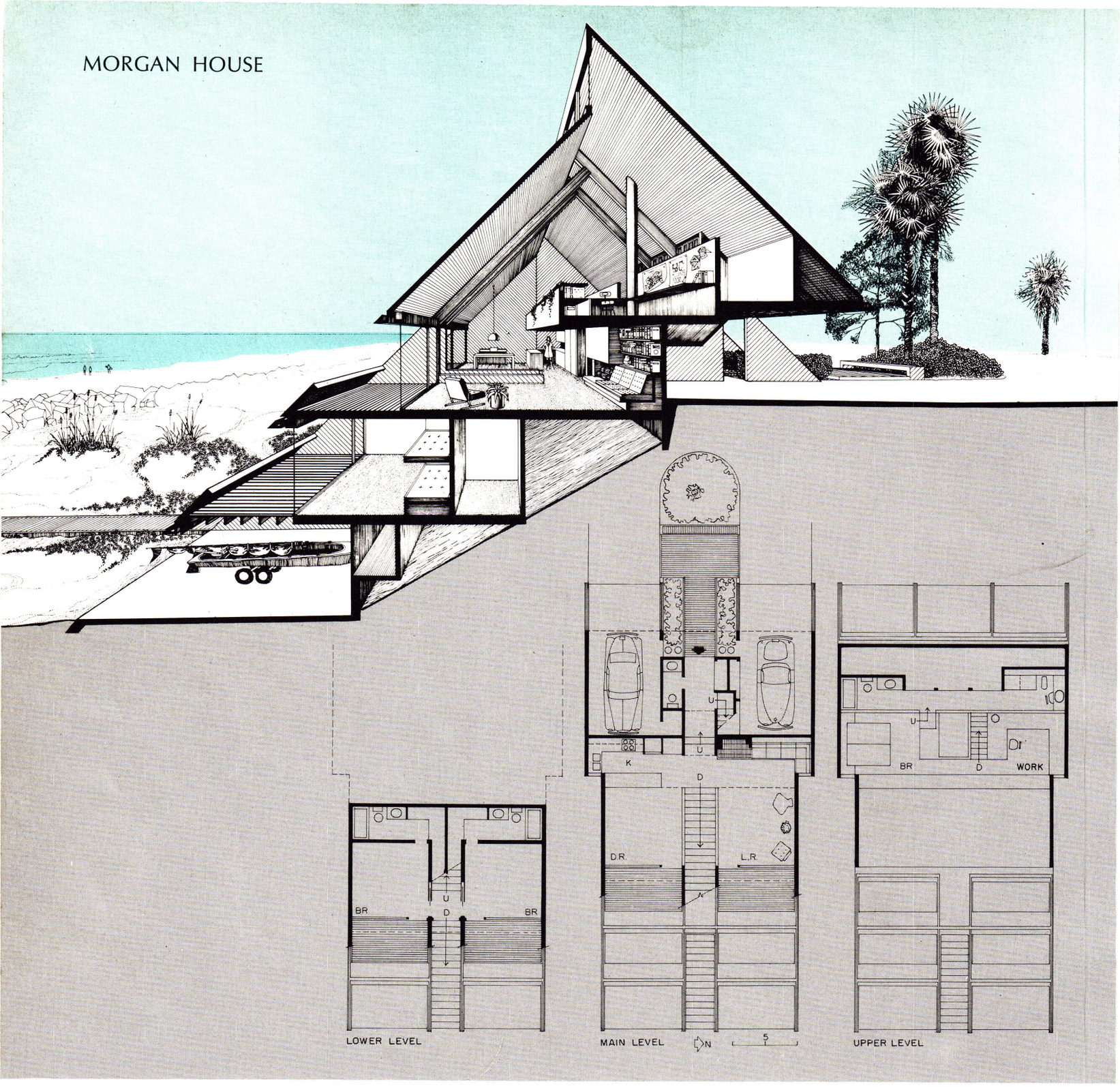
The intimate outdoor spaces are designed for public use—for strolling, sitting or eating lunch at the noon hour—and they provide a remarkably pleasant alternative to the disorganized and ordinarily unreachable roofscapes of most public buildings.

What is perhaps most important about this facility is that it departs so thoroughly from the authoritarian prototype that has become increasingly vexing to the public, the police and the whole system of criminal justice throughout the country. Here, instead, the facility has been designed to be inviting, open and welcoming to any citizen at a moment in history when these elusive qualities seem most urgently in need.



CATHERINE STREET ELEVATION

MORGAN HOUSE



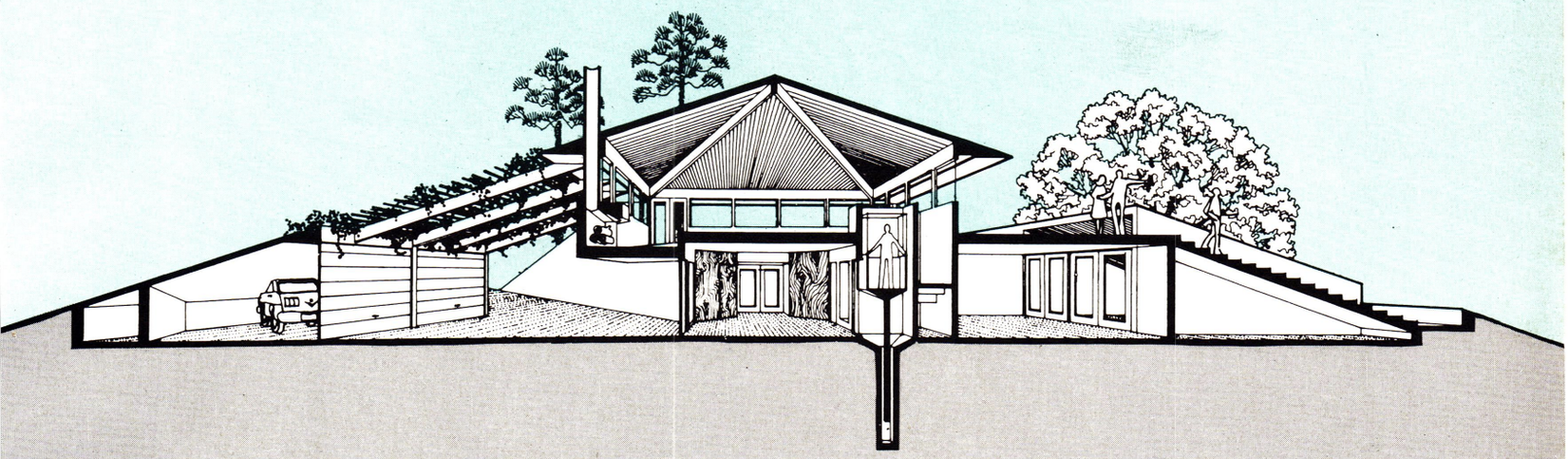
A careful study of the dune's natural profile, plant cover and stabilization preceded the design of Morgan's own house on Atlantic Beach outside Jacksonville. From these studies, he decided to step the house up the eastern flank of the dune in four ascending levels. In the centuries-old tradition of many Mediterranean builders, the house opens, at its base, to a broad expanse of beach. The lowest enclosed level contains bedroom, baths and decks for the Morgan's sons. The level of the main entry includes living room, dining space, kitchen and carport. The master bedroom and work area and storage are located on a gallery overlooking the main living areas and are lighted by a tall clerestory that runs the full width of the house. A central stair links the levels and creates a long, powerful diagonal around which the main spaces of the house take shape, with consistent interest, at each level (see plans).

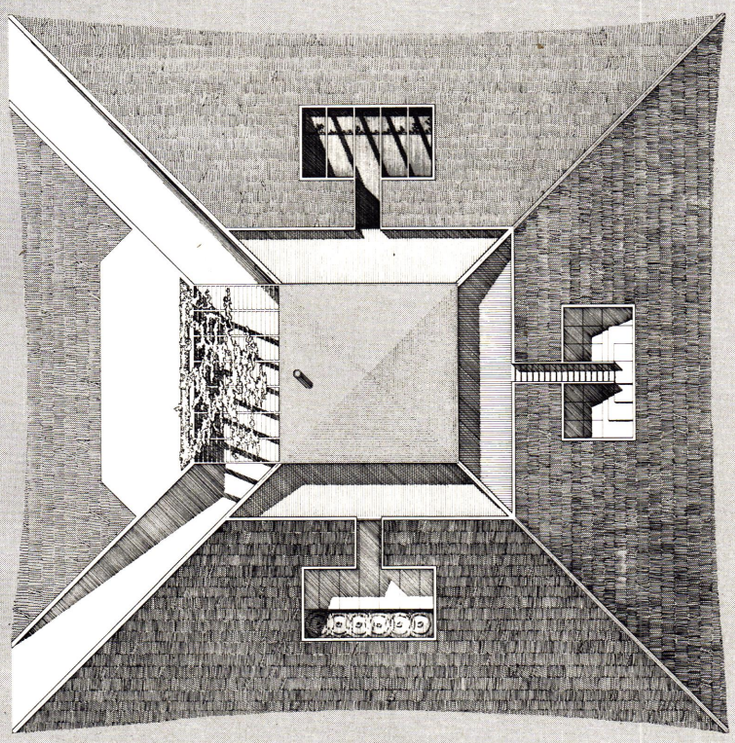
Because the lot is narrow, side and rear walls are closed for privacy. The major openings all face the Atlantic and are sheltered from sun and glare by sloping roof overhangs or canted deck parapets—a device Morgan exploited with skill in his award winning, 1969-'70 design for the Florida State Museum in Gainsville.

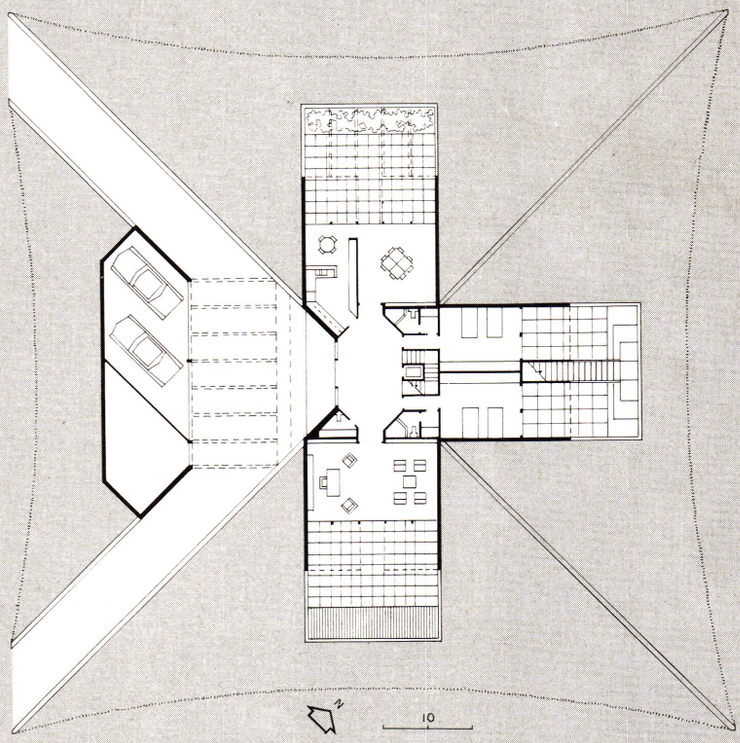
Now nearing completion, the house is framed in wood and clad in wood siding, bleached and laid up in a pattern of opposing diagonals. Pilings are sunk into the dune and used to support a simple system of concrete grade beams and slabs.

The spatial excitement the Morgan house reveals in such abundance stems from its carefully layered organization and from a firm insistence on conforming to the sloping profile of the site. But while the earth has clearly been an important design determinant, it has not become part of the house. In the design of the Florida hilltop residence (facing page), and the complex of dune houses for Amelia Island (page 136), the sense of earth form architecture —of buildings as landscape— reaches a more fully articulated expression.

HILLTOP HOUSE







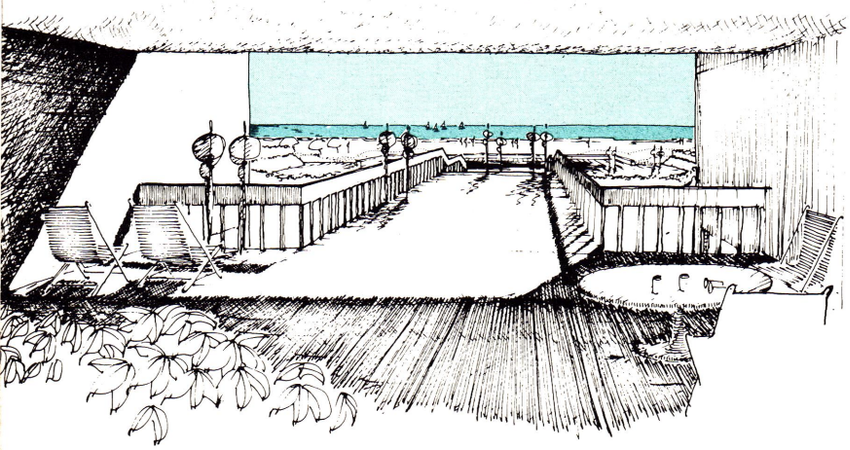
The house carved out of the crown of a hill is, of course, an ancient theme in vernacular design. The Incas employed it at Pachacamac. So did several of the Indian tribes who lived in central Florida where Morgan is re-interpreting the theme for a retired businessman who values privacy and whose interests center on the natural sciences.

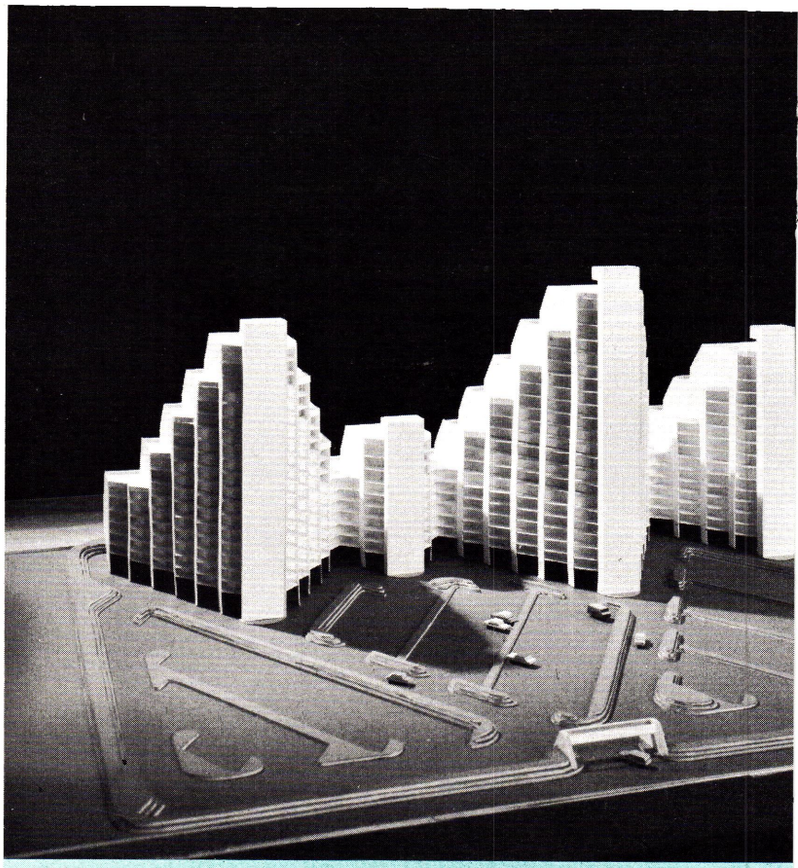
The plan is essentially cruciform with library, dining, kitchen and sleeping areas incised into the hill to form the lower level of the house. Each space looks out to a garden or court around which the earth has been bermed to restore the hill's natural contours. These spaces will feel closely contained but the courts will be more than sufficient to preclude any sense of entombment. Contrasting sharply with the lower spaces, the observatory above is glazed and opens to views through 360 degrees. From this space, says Morgan, "230 feet above the citrus groves below, it will be possible to watch seven thunderstorms in progress simultaneously all around the horizon."

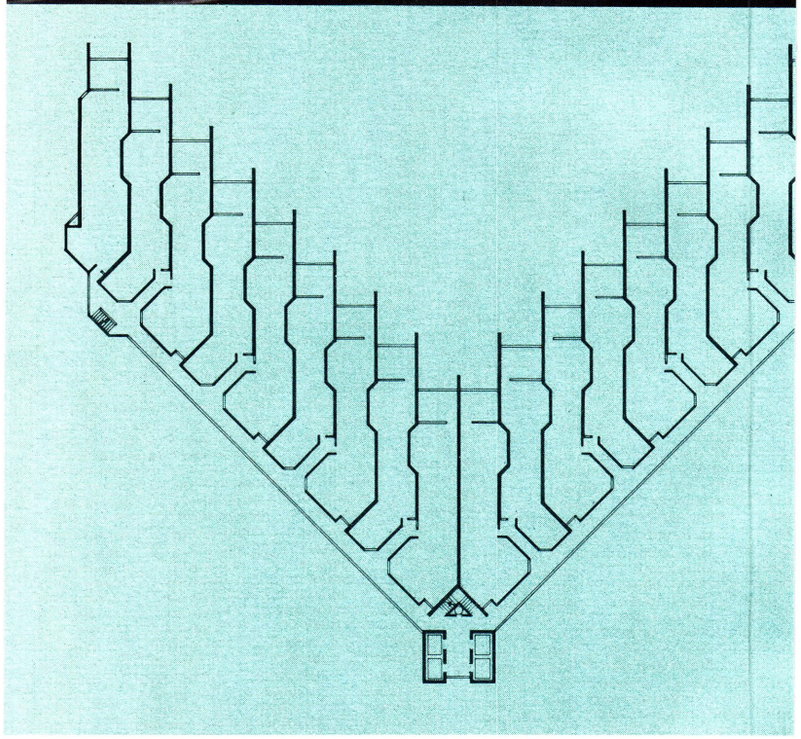
The biaxial symmetry of the plan relates to Morgan's earlier design for the Jacksonville Children's Museum. In both buildings, the visitor enters from below and rises, in a predictable geometry, into the main space. In this hilltop residence, however, the cloak of earth has been drawn up and the hill healed ecologically.

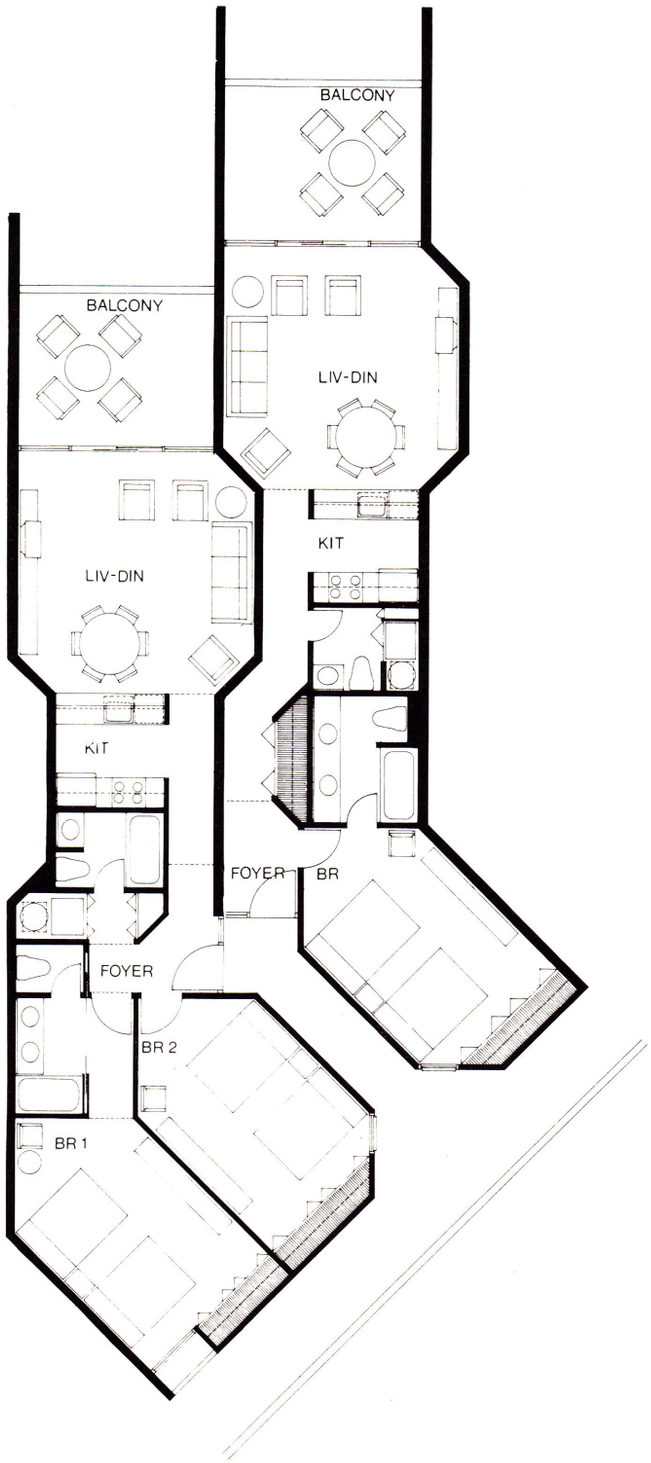
Though certainly not without romance, this splendid scheme approaches the problems associated with earth form architecture with a clear-headed and convincing realism.

WHALEY CONDOMINIUM



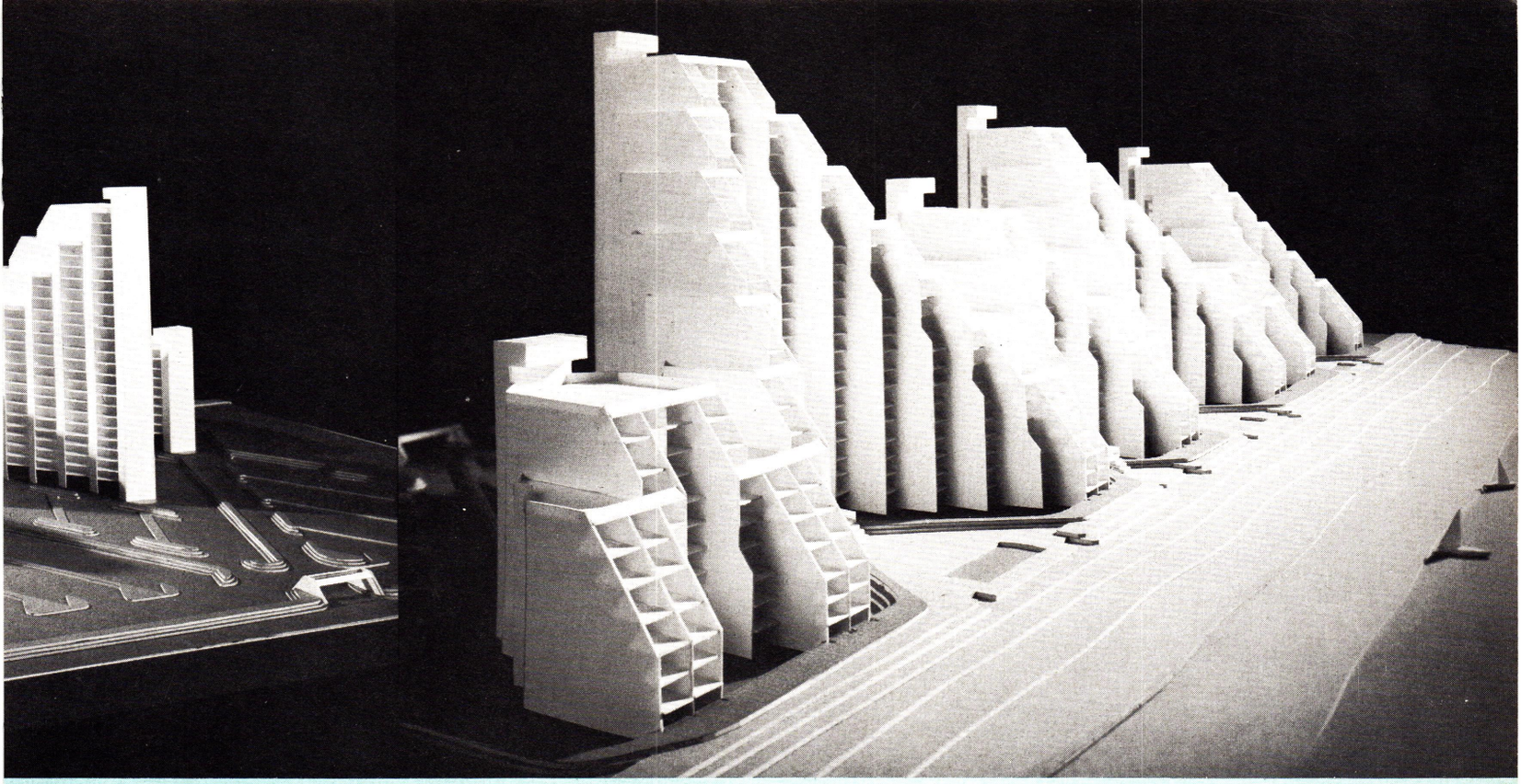


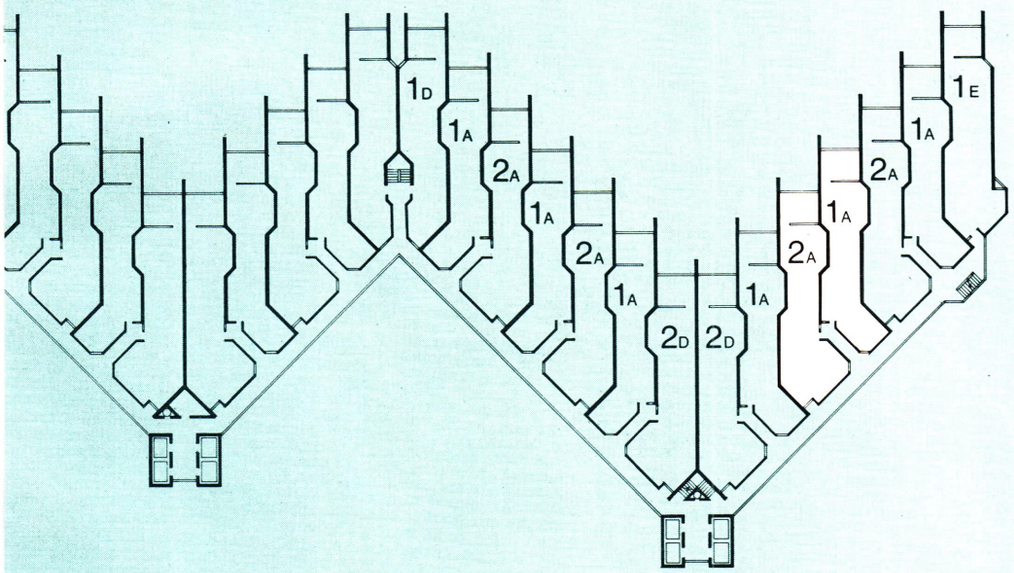




"Sand dunes," says Morgan, "form themselves in irregular heights sweeping up from the sea, sometimes advancing and sometimes receding from the beach, with blowouts (wind valleys) occasionally breaching their crests." These notions of natural dune formation served as a basis for the massing of this oceanfront condominium along the Maryland shore, and mark it as earth form architecture only in the extended sense. But like the dunes on which they rest, these towers rise in graduated shapes to form an undulating barrier against wind and water.

The towers step up to heights of 13-, 19- and 25-stories and each culminates in a rooftop terrace overlooking the ocean. Individual apartments are one- and two-bedroom units each with its own balcony facing the beach. Each pair of apartments is reached by a narrow entry off an enclosed access balcony on the side away from the beach (see plans). By turning the bedrooms at 45 degrees from the main axis, Morgan established a two-living-room/three-bedroom

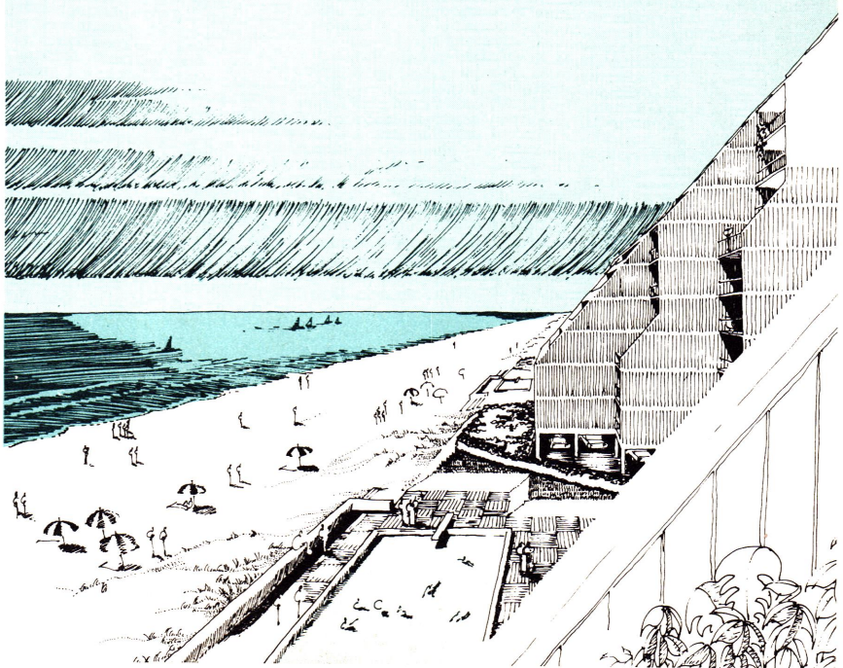




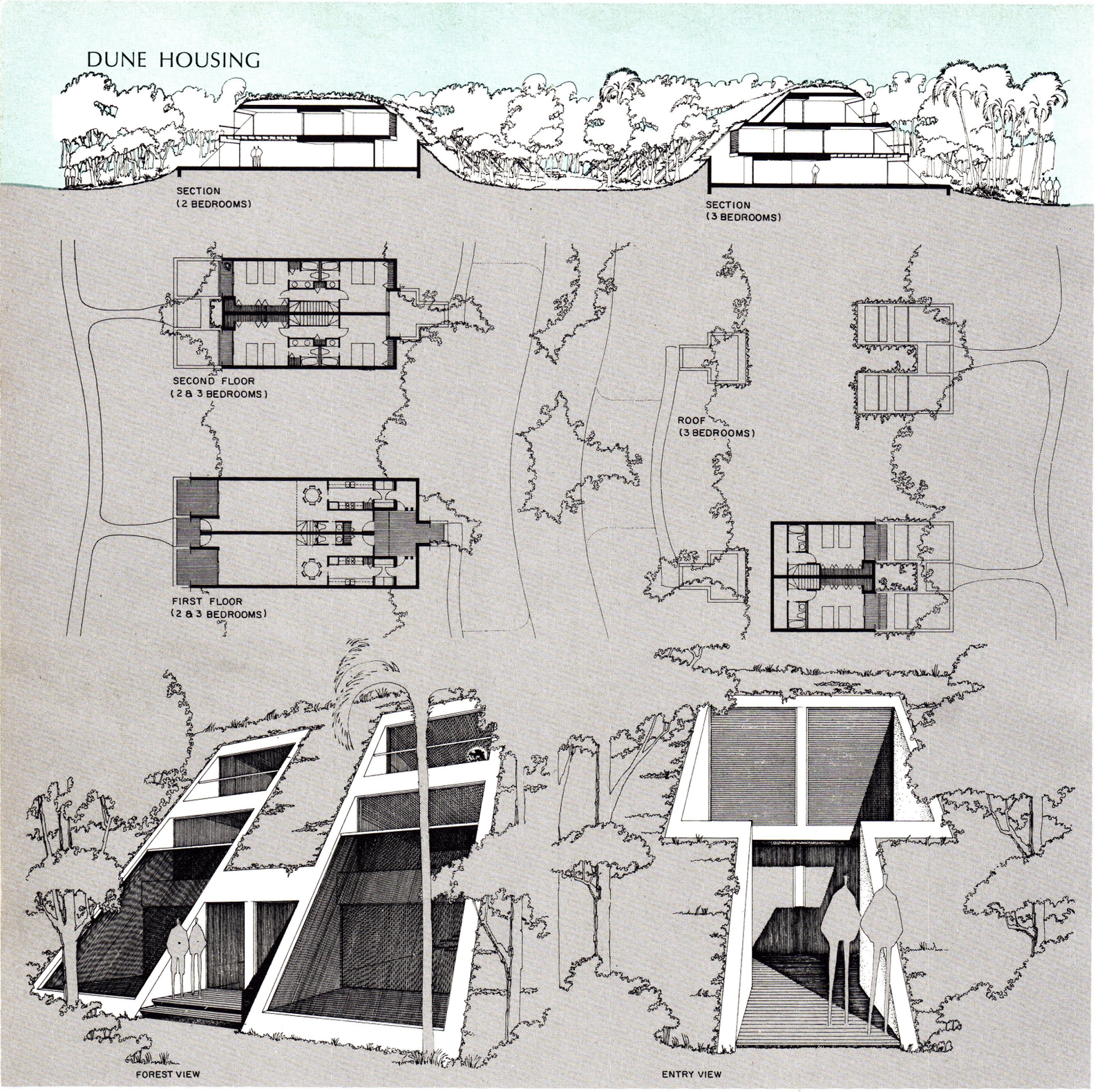
rhythm of offsets that gives the condominium its basic design character. While the apartments are compact and some questions of privacy—particularly around the bedrooms—remain to be solved, the fundamental arrangements of space are sensible and offer a welcome alternative to the familiar expedient of walling off the sea to achieve economical densities. Here the density is 72.5 units per acre but a desirable sense of openness and amenity remains.

The structure will be concrete fin and flat slab with pilings used to support columns on grade. The concrete will be placed by a spraying technique that sharply reduces both the time of construction and the necessary formwork. A variety of concrete finish materials are now under consideration by the architects.

Surface parking is kept on the land approach side of the condominium, away from the beach areas, and is carefully bermed for visual screening—a solution that echoes, in miniature, the earth forms of other projects on these pages.

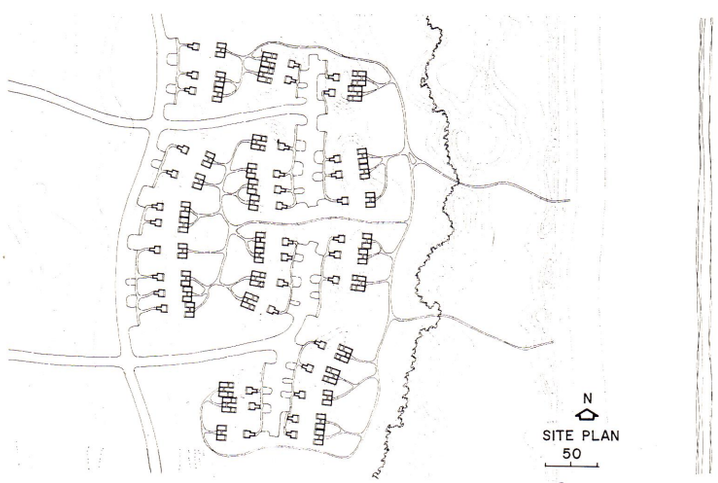


DUNE HOUSING



Morgan's office was one of several firms invited by the developer to submit sketch presentations that indicated a direction for development for Amelia Island off the Florida coast near Jacksonville. The plan called for condominium housing composed of two- and three-bedroom duplex units. Morgan's scheme envisioned the two types paired to form a tunnel through the existing system of secondary dunes. The houses would be entered through a small court incised into the duneside (see sketch above right). Bedrooms would occupy the upper levels with main living spaces below turned outward to views of the forest floor.

The houses would be built of reinforced block walls and concrete slab; partitions and decks of standard wood framing —a construction vocabulary Morgan feels would compete economically with comparable above grade construction. In its conception, its construction and berming techniques, its sensitivity to climate and site, this project echoes the Florida State Museum.

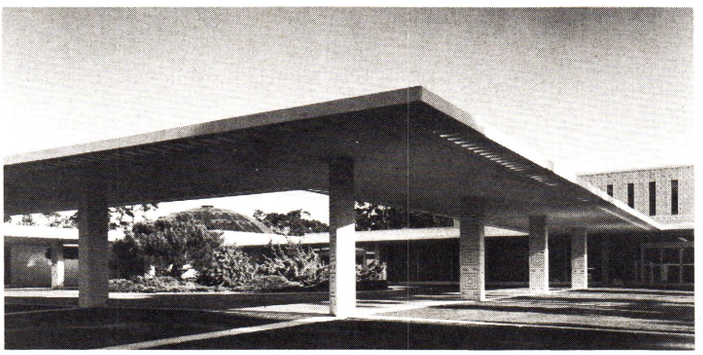


Two California hospitals by Edward Durell Stone set a challenging pace in design, and economics: an expansion at Monterey; a new start at Palm Desert

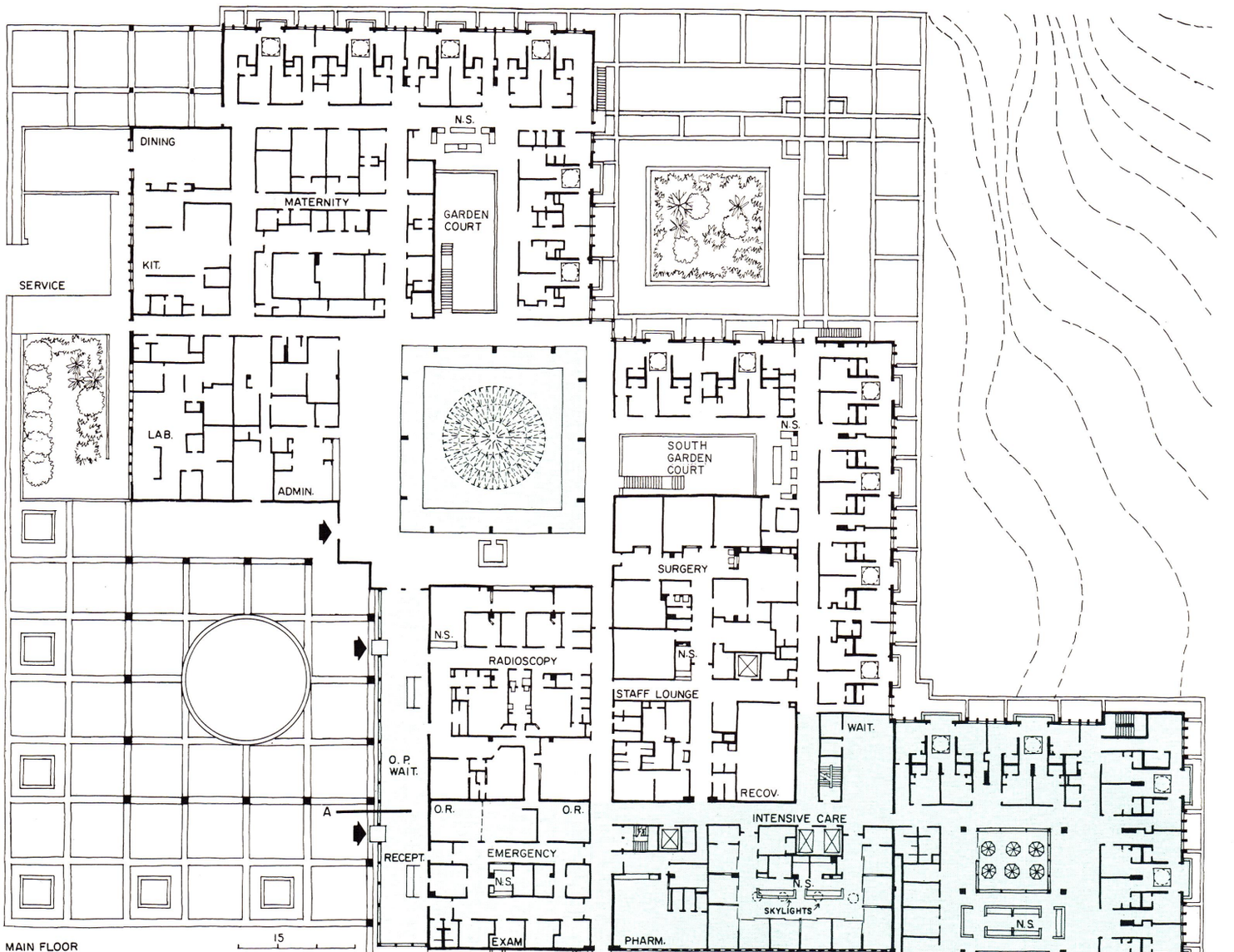
1

The Community Hospital of the Monterey Peninsula at Carmel

Too lavish for a hospital? Not so, says Monterey Hospital Administrator Thomas E. Tonkin; and proof of the therapeutic success of the two-story garden courts, fountained interior plazas and quality residential atmosphere—as well as proof of the economic success of single-room occupancy—is the two-phase expansion of domed lobby (below) and three-level addition visible in the background at right.



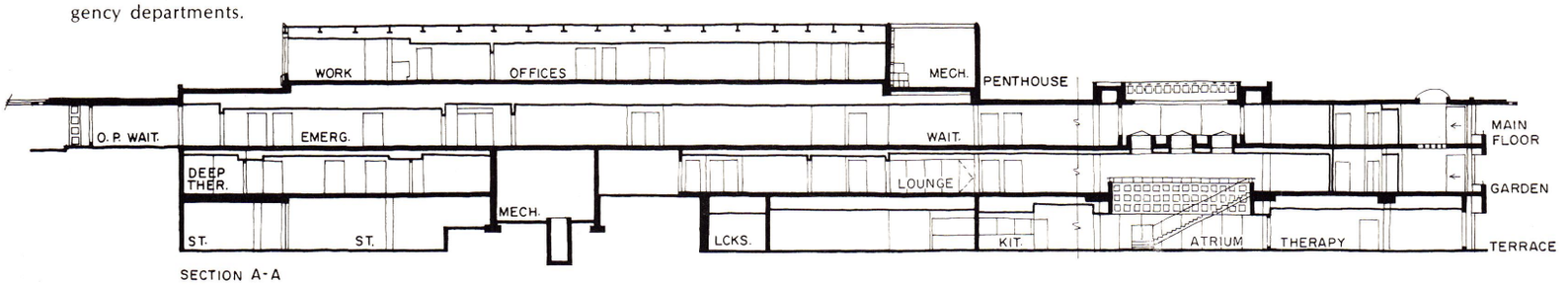
Morley Baer photos



The new three-level building (plus expanded penthouse) at Monterey ties in to remodeled sections of the existing hospital and expands surgical and x-ray facilities as well as providing a new Community Mental Health Center and 65 additional bedrooms. Passageways from the new pavilion connect at the main floor level with a previously remodeled central pool court, now an extension of the lobby.

The section below is on an offset line as shown on the plan and cuts through the expansion of the original penthouse which contains auxiliary offices and lounge spaces.

The photo at top opposite shows the approach to the existing main entrance, to the right of which is the newly enclosed waiting area for relocated outpatient and emergency departments.



SECTION A-A

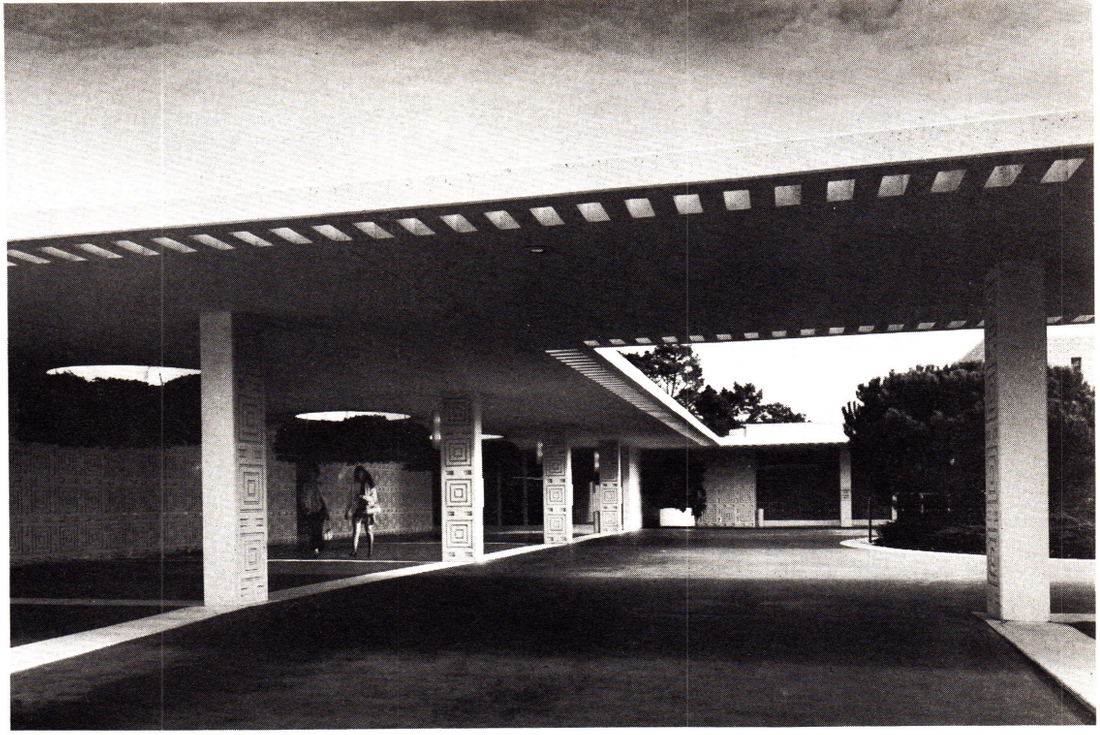
Preamble to a three-level, 65-bed expansion of the Monterey Peninsula in Carmel was an extension of the original main lobby by conversion of the 72-foot-square open court into a domed enclosure. The glass dome over a central pool preserves the aspect of a conservatory for surrounding spaces which perform the conventional functions of a hospital lobby, with the addition of various snack bars, boutiques and waiting areas that have the atmosphere of conversation corners and sidewalk cafes. The chilled water of the fountain pool provides not only the esthetic experience of such amenities but also acts as a temperature and humidity control for the area.

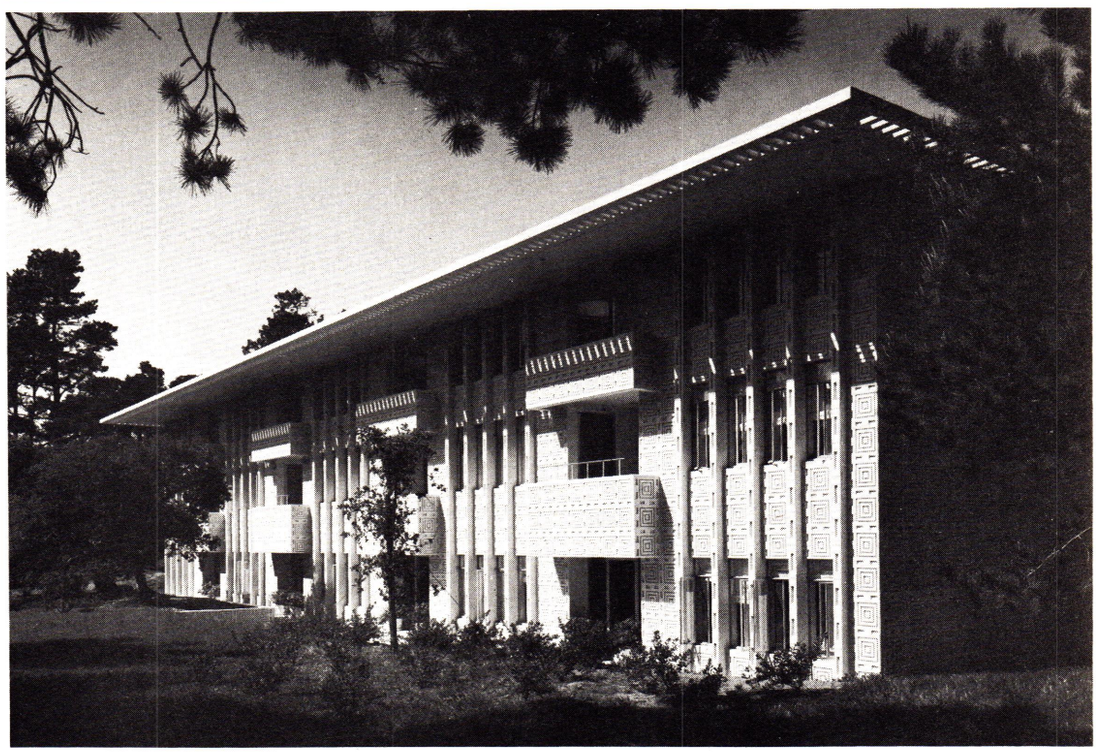
Adjacent to this converted lobby is the mezzanine level of the two original two-level skylighted garden courts (see next page) that have provided the nucleus for surrounding single-bedroom nursing units. The single-bed commitment and the general architectural amenities have contributed to the virtually 100 per cent occupancy that spurred the decision to proceed with expansion of the hospital in the new wing.

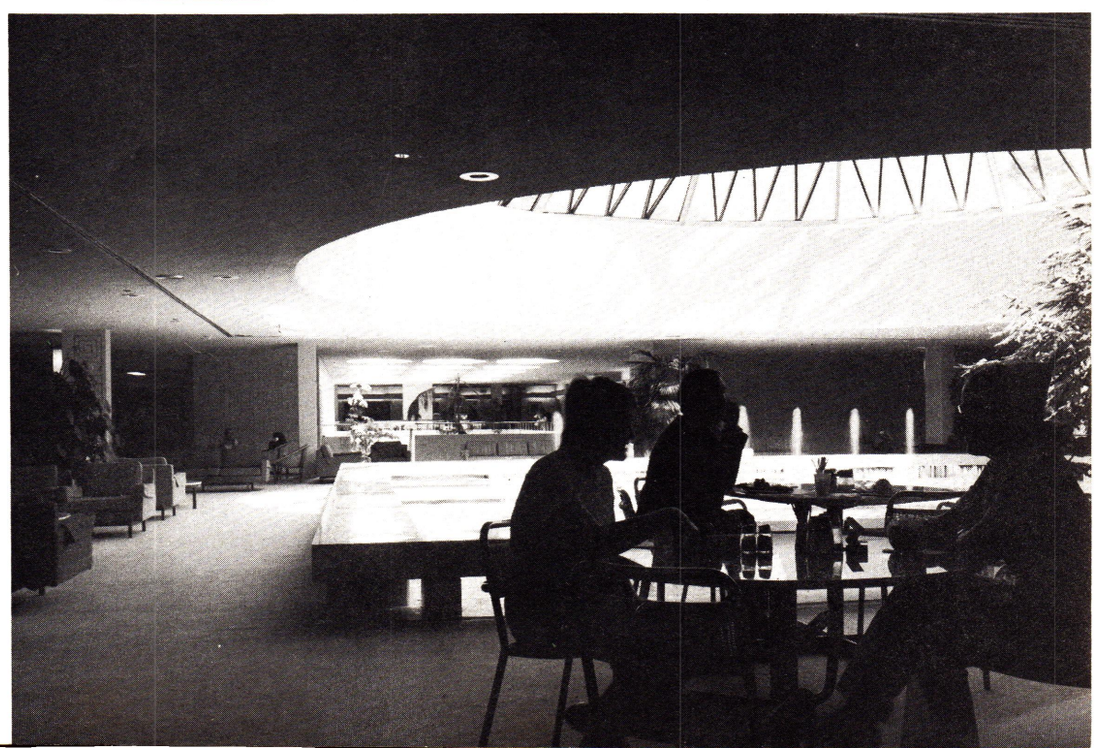
The new wing provides a new out-patient department at the main level, expansion of x-ray and surgical departments, a community mental health center and a relocated emergency department in addition to the 65 new beds. The out-patient and emergency waiting areas were accomplished by the glass enclosure of an existing canopy area adjacent to the main entrance court.

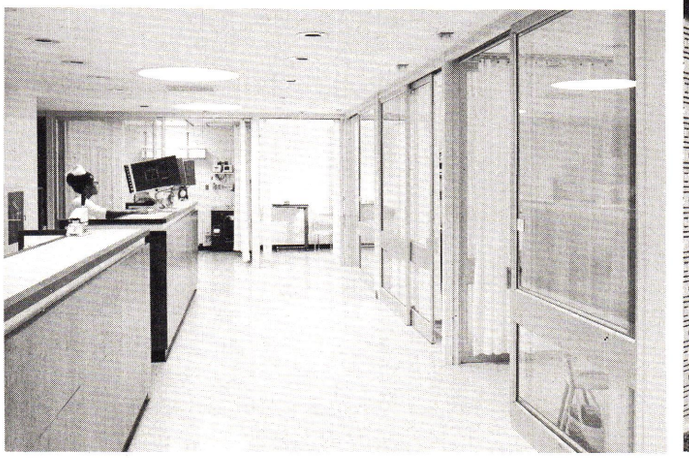
Designations of the various levels of the hospital are unconventional because of the grade-level access provided on each floor. The main floor is top level with access from the entrance court. The middle level is called the garden floor with grade level access on the south. The lower level, called the terrace floor, has grade access at the east end to the public areas of the new mental health center. The garden floor level contains patient rooms grouped around the eastern end which continues the four-room cluster pattern with common skylighted balcony typical of the existing building (see plan detail, next page.) Patient rooms in the new wing surround two skylighted areas, each two floors high; one's an activity area at the garden level itself, the other a court-like atrium stairwell which provides access to the Mental Health Center below. Skylights for this atrium penetrate the main floor as turret-like tubes (see section opposite page.)

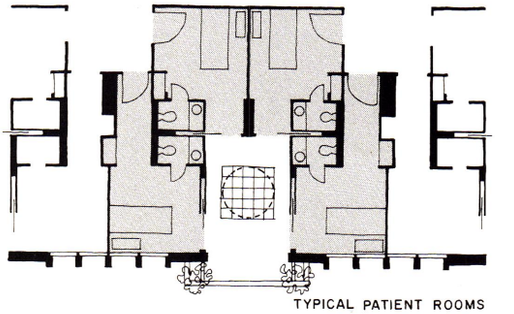
COMMUNITY HOSPITAL OF THE MONTEREY PENINSULA, Carmel, California. Architects: *Edward Durell Stone, Inc.* Lobby extension engineers: *Loran A. List, Dale J. Fehr* (mechanical and electrical). General contractor: *Daniels & House Construction Company*. New addition engineers: *Pregnoff, Matheu, Kellam, Beebe* (structural); *Cooper, Clark & Associates* (soils); *G.M. Simonson & T.R. Simonson* (mechanical/electrical). Landscape architects: *Edward D. Stone, Jr. & Associates*. General contractor: *Rothschild and Raffin, Inc.*





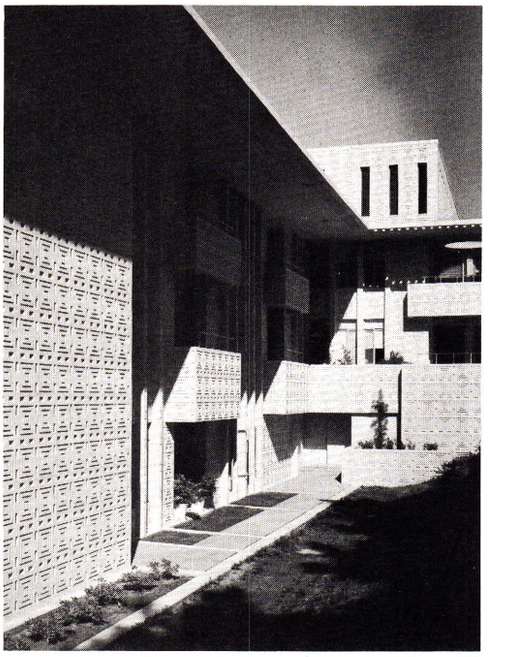






TYPICAL PATIENT ROOMS

The two-level south garden court (top left) in the original hospital now connects at the main floor top level with the adjacent pool area and by corridor to the new pavilion. The out-patient and emergency waiting areas (center left) are in a long continuous space at the main level created by glass enclosure of the original canopy. At bottom left is the intensive care unit of the new pavilion. Room clusters around balconied porches are shown above.

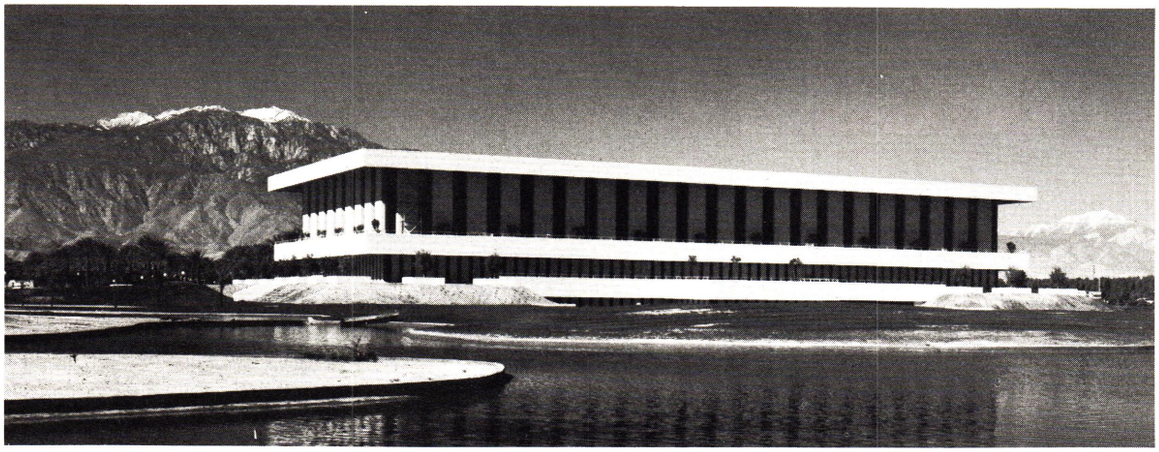


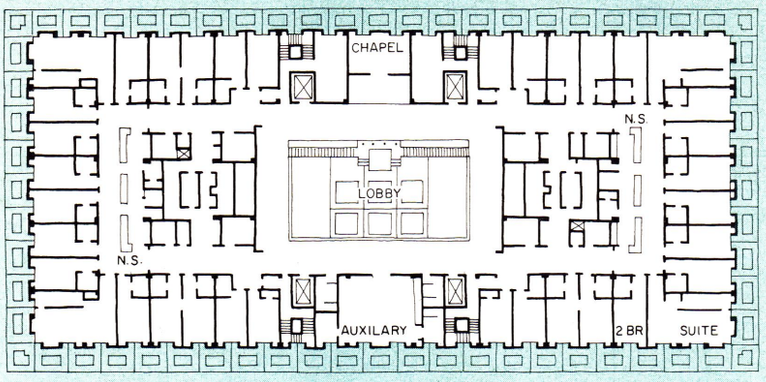
2

The Eisenhower Memorial Hospital at Palm Desert

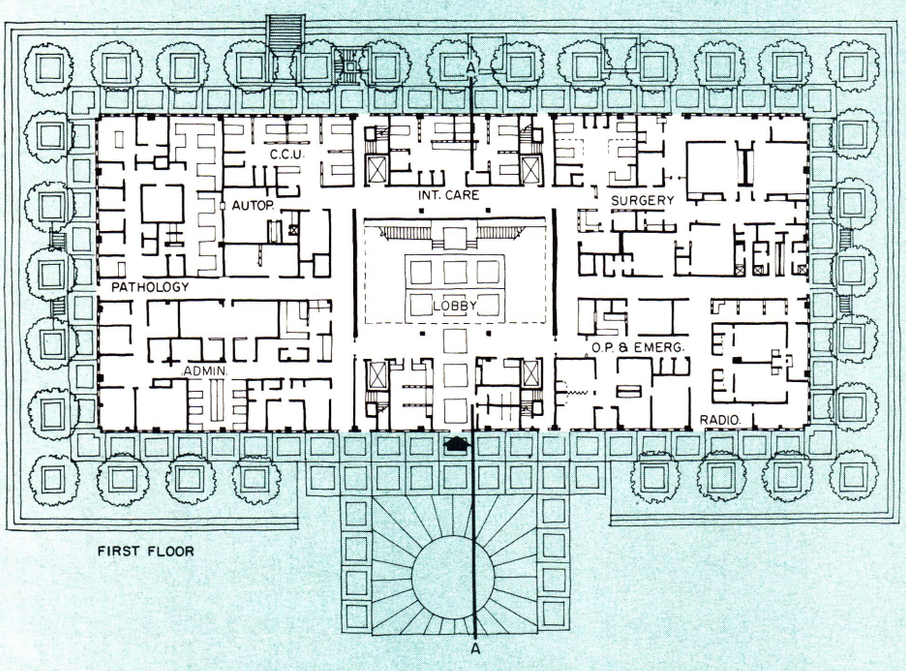
First phase of a new medical center, wholly privately financed, emerges as a 140-bed acute care hospital overlooking man-made lakes on an 80-acre desert-resort-country site in the California desert.

Julius Shulman photos

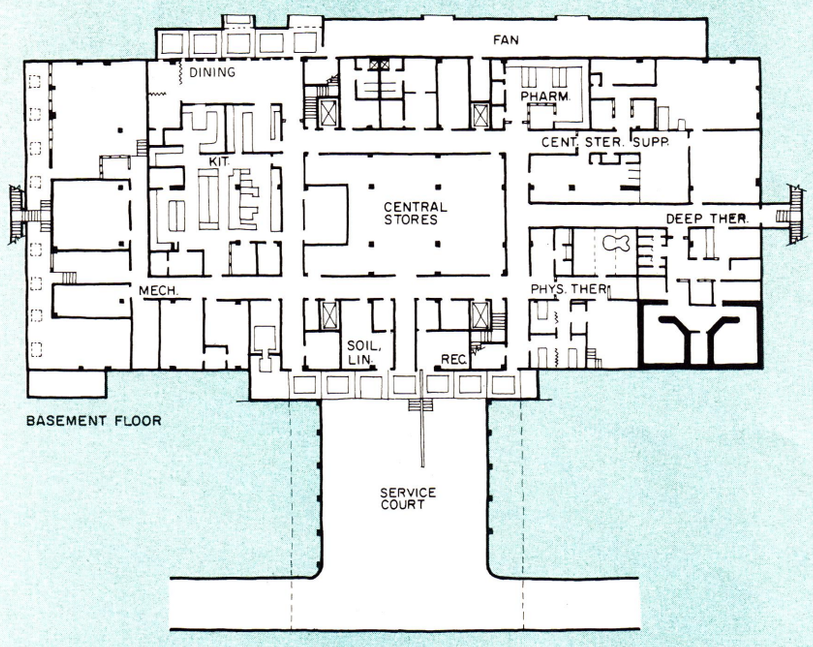




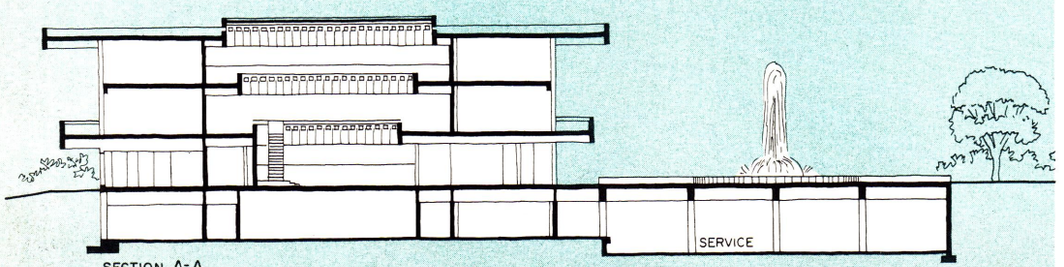
SECOND FLOOR



FIRST FLOOR



BASEMENT FLOOR



SECTION A-A

EISENHOWER MEMORIAL HOSPITAL

The Eisenhower Memorial Hospital, first phase of the Eisenhower Medical Center, in Palm Desert, California, is a four-level, 140-bed, acute care facility situated on an 80-acre site donated by Mr. and Mrs. Bob Hope. The hospital is a non-profit institution funded entirely by the trustees and friends of the hospital and by a substantial percentage of the proceeds of the annual Bob Hope golf tournament.

The heart of the 116,600-square-foot building is a three-story interior garden court, reminiscent of the technique used at Monterey, with surrounding balconies providing space for nurses' stations and lounge areas for patients and visitors.

Patient rooms are on the two upper floors arranged in quite conventional "racetrack" plan as shown at top left—with the difference of the central well, and the fact that the interiors are more luxurious than in most hospitals and the corners are occupied by two-room suites.

The main floor, approached through a fountain court, contains the main lobby, administration, out-patient, radiology, surgery and laboratory areas. The below-ground area is approached through a service court under the fountain pool and contains general stores, kitchen and cafeteria, and a separately partitioned southeast corner area housing a deep therapy and physical therapy suite.

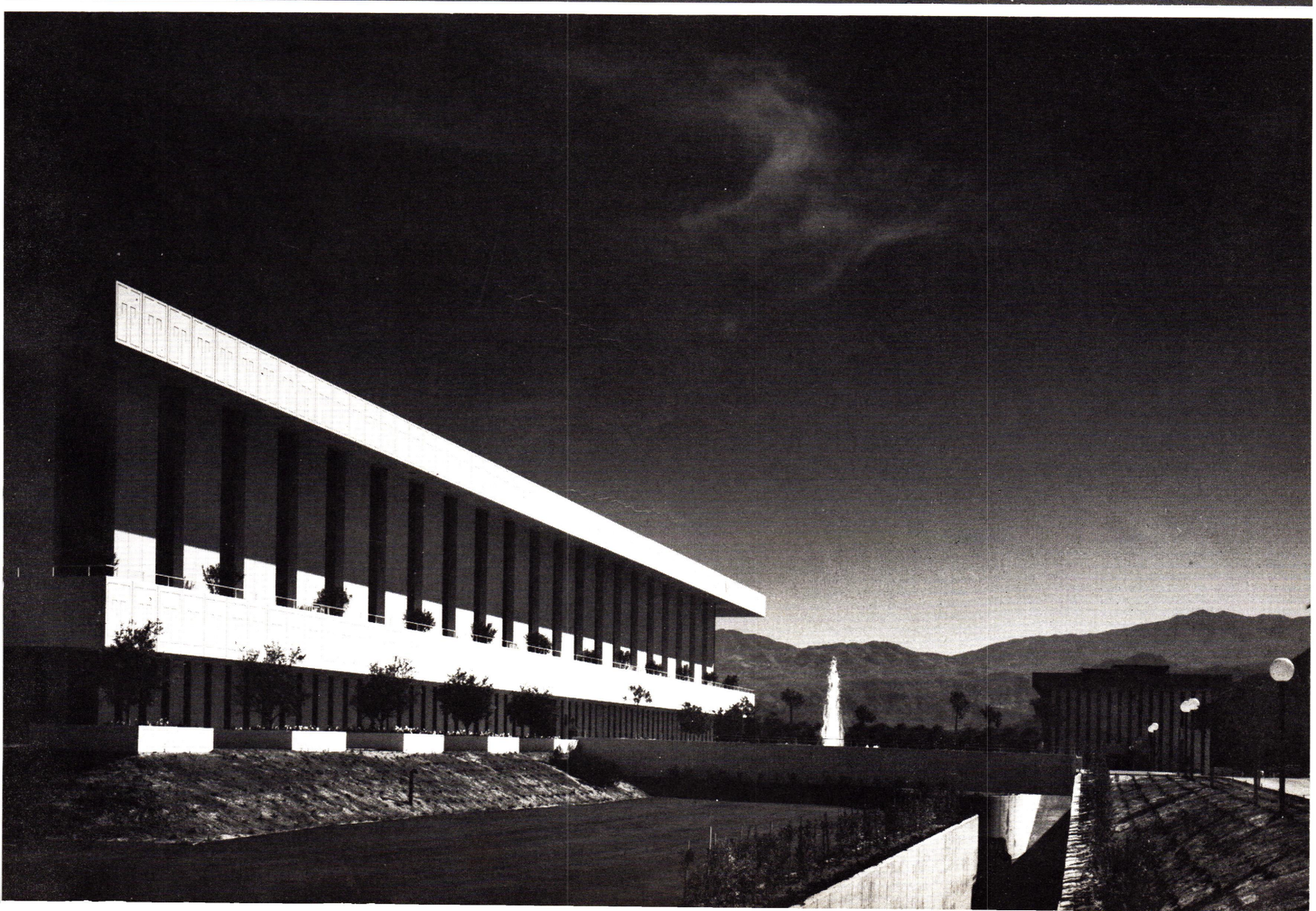
Ultimate development of the medical center will include a second hospital building similar in scope to this first phase. There will be additional buildings providing medical offices, medical library and auditorium with the objective of creating a teaching facility. The center will specialize in rheumatic and arthritic diseases, chronic respiratory ailments and allergies, taking advantage of the warm, arid climate remote from industrial and urban pollution.

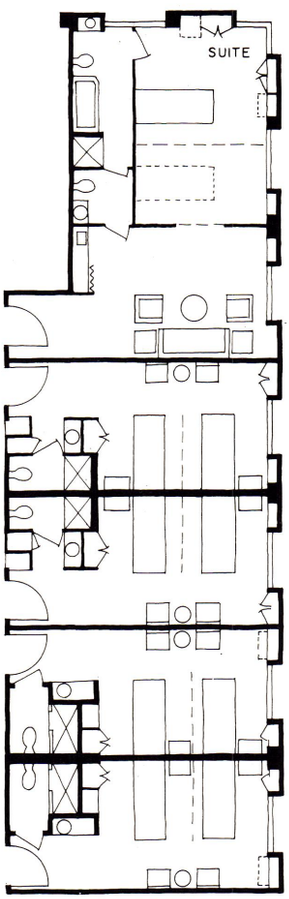
Landscaping has converted the open desert of the original site to include five lakes to be used as reservoirs for irrigation and fire control reserves. One of these lakes now serves as a reflecting pool at the rear of the hospital building, while the front approaches are landscaped with date palms and other plantings providing some shade and more attractive aspect for parking areas.

The exterior walls are concrete with aluminum mullions and bronze-tinted glass.

The architect's interior design makes use of light-colored walls and fabrics with contrasting panels of warm color and patterned carpets of orange and red. The interior of the lobby and surrounding balconies is similarly treated in color accents provided by furnishings and paintings.

EISENHOWER MEMORIAL HOSPITAL, Palm Desert, California. Architects: *Edward Durell Stone, Inc;* engineers: *Conrad Associates* (structural and soil); *Buonaccorsi & Associates* (mechanical); interior design consultants: *Edward D. Stone & Associates;* landscape architect: *Edward D. Stone, Jr. & Associates;* general contractor: *Forsberg & Gregory, Inc.*





TYPICAL PATIENT ROOMS

Patient rooms at the Eisenhower Memorial Hospital are predominantly double rooms except for isolation rooms and two-room suites at the corners of each floor. Photo at bottom left shows the architect's interior design for one of the suites, with light walls and fabrics and warmly colorful wall panels and rugs in orange and red. All windows overlook mountain scenery and a well developing landscape that will soften parking areas. Room layout is conventional but furnishings are far above the austere norm.

The Urban Development Corporation of New York has become a powerful force in housing within the last four years, and some people think its mechanisms should be copied by other states or nationally

HOUSING: ONE GOVERNMENT AGENCY REACHES FOR GOOD ARCHITECTURE

The New York State Urban Development Corporation is large (63 projects currently being built in 23 New York communities) but its power comes from its potential, and from its techniques and commitments, as much as it does from accomplishments: important people still see the UDC as a prototype for other states or for the nation, and so it is watched closely and its actions draw attention. Some of its first projects are now complete, and this Building Types Study is a visual report on four of them; in Buffalo, Binghamton, New York City and Utica (see map, below right). In the qualities of the housing it creates, we can begin to see how the UDC intends carrying out its commitments.

An earlier article ("Economics and Politics in Housing," RECORD, April 1971, pages 124-131) discussed the internal financial arrangement of the UDC, and its political powers: They build housing for low- and moderate-income tenants, without regard to race, in urban centers where the housing is needed. They are largely financed through their own power to issue bonds, and can condemn property, buy or sell land, and may override local building codes. What is interesting now is UDC's relationship with architects and design professionals. The UDC has paid fees to over 275 private architect or engineering firms over the last four years, from small consulting jobs to design fees for a $72 million housing project. The architects have come from all over the country (the UDC does not restrict itself to New York State firms) but most are located on the East Coast, and most are what might be called "high design" offices. This is unusual for a governmental agency. Firms with large corporate practices, or firms that maintain themselves through political connections in government sometimes are commissioned by the UDC, but they are small in number compared to smaller firms. Day-to-day arrangements with architects are discussed in the texts that follow, in conjunction with the specific projects. The UDC has thirty architects on its staff, either registered, or unregistered with architectural degrees. A growing number of architects are finding work outside "normal" office practices, and such UDC architects are particularly well-placed: they can affect housing policy, and influence changes in architectural form, too.

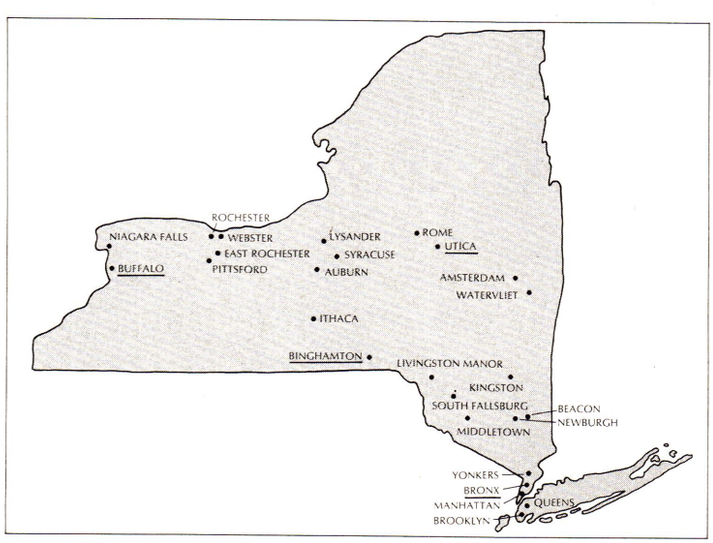
There are major confrontations ahead, as the UDC attempts to build for the first time in the suburbs, thereby creating substantial local animosity (it seems to be automatic). UDC suburban proposals are attacked by residents and politicians of the neighborhoods most often because they have too high densities, or insufficient recreation spaces, or too small apartments, or through the more general argument that UDC housing will not serve people currently in the communities. The UDC points out that private developers provide adequate single-family detached housing, so UDC project densities are almost always higher than the suburbs in which they are placed. The UDC does not usually provide baseball fields or larger-scaled recreation facilities on its sites (that suburban areas expect) and UDC apartments are smaller than normal suburban dwellings (though larger than some city dwellings). But the UDC sees its task as one of equalizing housing opportunities for low- and moderate-income citizens, and insists that these people, too, have a right to good schools, grass, trees, and clean air. It is nearly an impossible problem; some people do not want to see the quality of their lives "diluted," some others want the opportunity to live better. The UDC recently postponed construction on most of its sites in Westchester County, immediately north of New York City; by this it is relieving immediate pressures, but it is also postponing, and for the first time, opening to question the true nature of its long-term commitments.

Another problem is developing. The UDC depends on Federal 236 housing funds for some of its work, and the program is showing questionable results nationally (some feel it is a way for banks and developers to make no-risk profits, at Federal expense). If the 236 program is reduced or eliminated, the UDC may have to do the same with some of its goals. Edward Logue, writing in the most recent annual report, makes clear the UDC's need for Federal interest subsidy programs.

The UDC must produce significantly better results than the traditionally organized agencies that preceded it; otherwise there is no reason for its extraordinary powers, and they may be taken away. The four projects here show it *has* produced extraordinary results in an architectural sense, in a very short time. These buildings are certainly better planned, are more handsome, and are more innovative technically than the vast majority of agency-built or -financed housing in the country.

But it has just begun to test its powers to get low- and moderate-income housing built outside the city core. Neither private enterprise nor traditional government agencies have succeeded; and as noted above, UDC is having some tough battles. If—with its extraordinary powers—it cannot succeed—what then? Who can? And how?

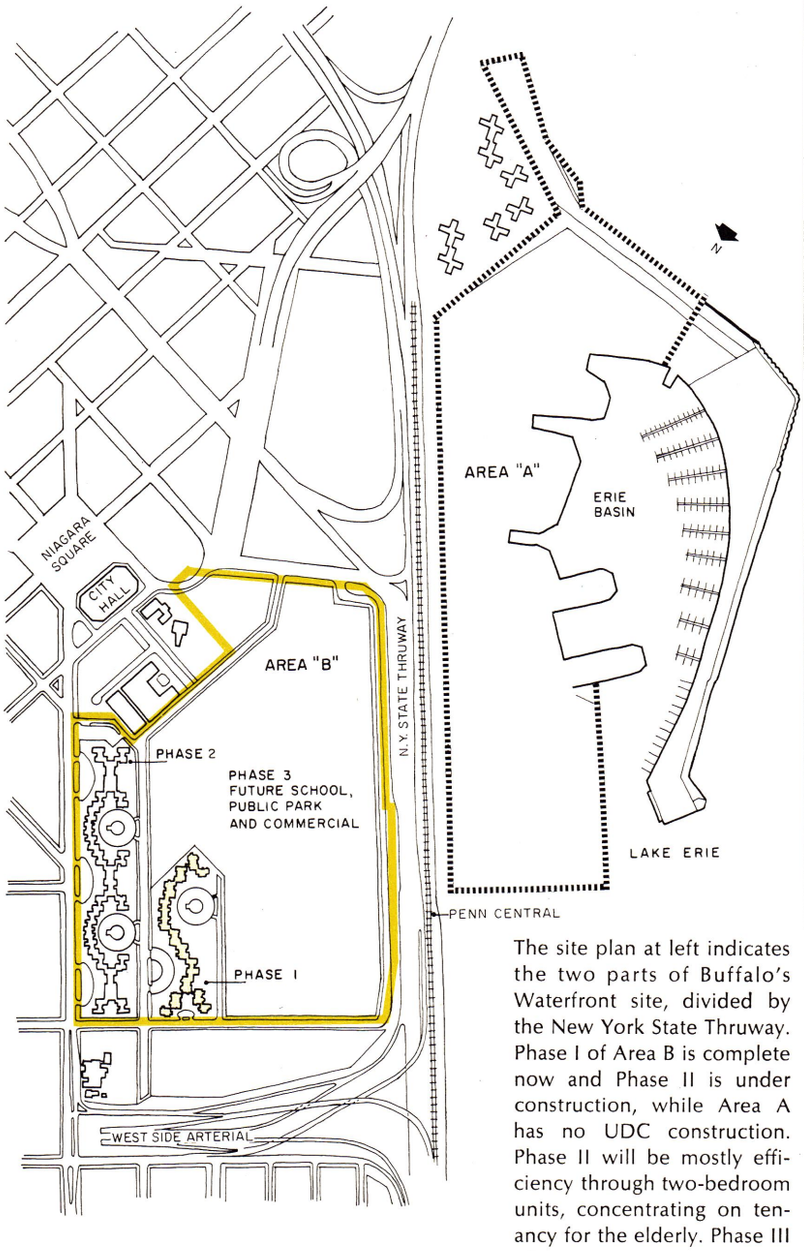
—Robert Jensen

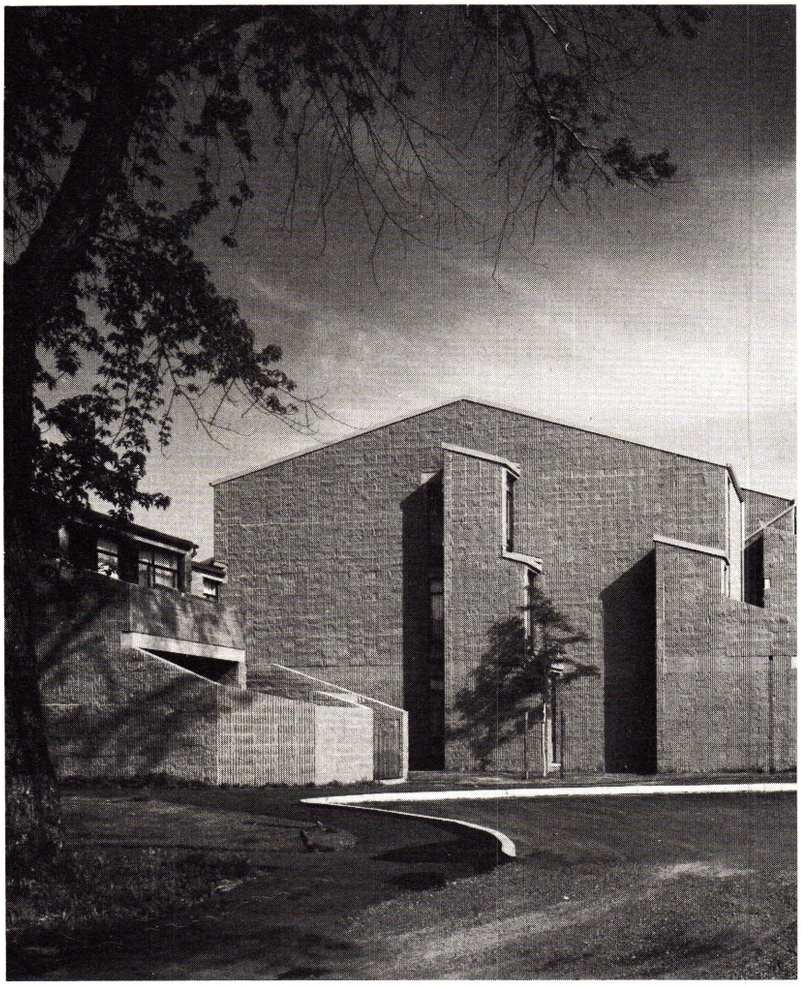


The Buffalo site by Paul Rudolph, with its first units now occupied, is a downtown project that is one key to rejuvenating the city

The Buffalo Waterfront Project is potentially the most dramatic development the UDC has undertaken, and its first housing is now complete and mostly occupied, as shown on the next four pages. We must say "potentially" because a large part of the Waterfront site remains to be built; the RECORD reported Rudolph's vision for the whole in November, 1970, pages 96-100. But the 142 units now finished follow almost exactly that original vision, as do the additional 472 units now under construction. The site is divided in half by the principal east-west road in the state, the New York State Thruway; it is not the first four-lane highway to cut off a city from its waterfront or make a mess of developable land, but there are at least tentative UDC plans to link the two areas for pedestrians in the final stage. Now Area B adjacent to Buffalo's downtown core is being developed with the first housing.

The completed new housing is being rented to moderate-income tenants (70 per cent), low-income tenants (20 per cent) and to low-income elderly (10 per cent), which





Rodney Calarneau (photo opposite)

The site plan at left indicates the two parts of Buffalo's Waterfront site, divided by the New York State Thruway. Phase I of Area B is complete now and Phase II is under construction, while Area A has no UDC construction. Phase II will be mostly efficiency through two-bedroom units, concentrating on tenancy for the elderly. Phase III of Area B will add a new park, some commercial retail development with retail parking, and a new K-6 school, not financed by the UDC. There will be three- and four-bedroom units planned for Phase III. The photos at right give some idea of the texture, intricacy and residential scale Rudolph has achieved.

is the standard UDC "mix": one they are trying to maintain in all their housing. Some of these tenants will be able to walk to work in the nearby office towers, and it is hoped that the project can rebuild a residential, pedestrian density in the area. Several old Buffalo neighborhoods nearby have maintained a kind of 19th century "Georgetown" quality where walking has not been forgotten. But American cities thinned by parking lots and new streets are not very hospitable to pedestrians, and the immediate area surrounding the site is no exception, as the aerial photo below confirms. For a while, the occupants of the new housing will have to turn in among themselves and to their new dwellings alone for any feelings of residential or pedestrian environments.

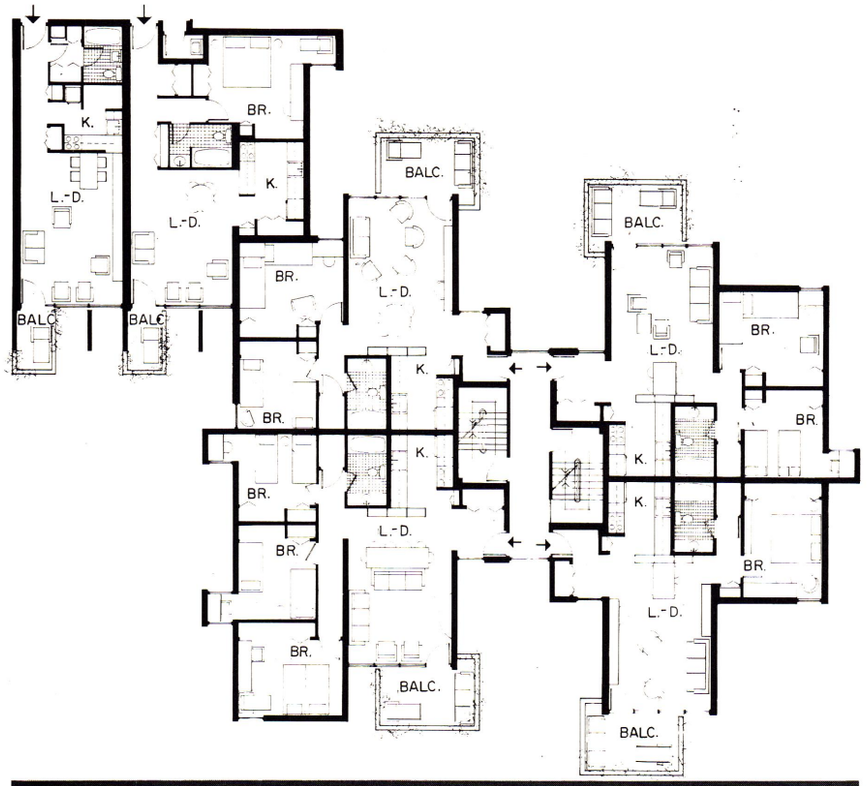
Rudolph's design does have a kind of tightly packed Italian hill town character, with its multi-level roof line, brown and roughly textured masonry and irregular balconies. It is interesting to see how he has transformed relatively simple sloped-roof dwellings through the addition of balconies, patios and a special extended niche in each bedroom. The photographs reveal that the balcony walls and ground floor patio enclosures, along with the vertical end walls that connect them, are independent of the parts of the building that enclose interior space. These patio/balcony units could be "lifted away" in any model of the project, yet they look absolutely homogeneous, and indeed their removal would destroy the visual character of the project. The bedroom niches jut out from the end walls of each double group of apartments, and step down through an additional width, one floor at a

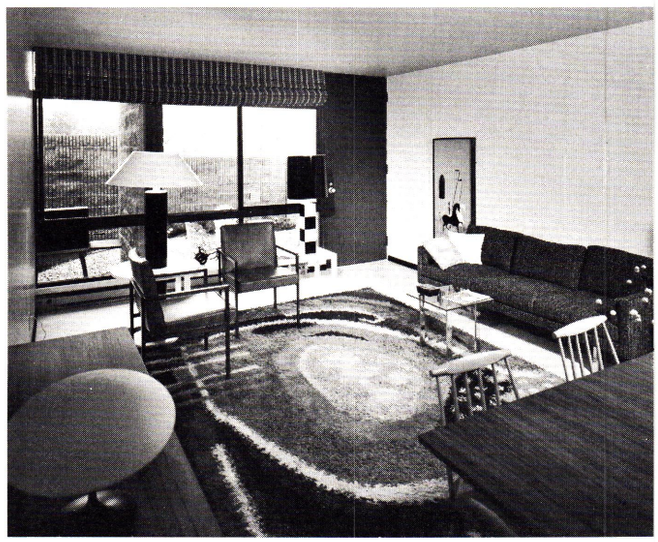
Joseph W. Molitor photos

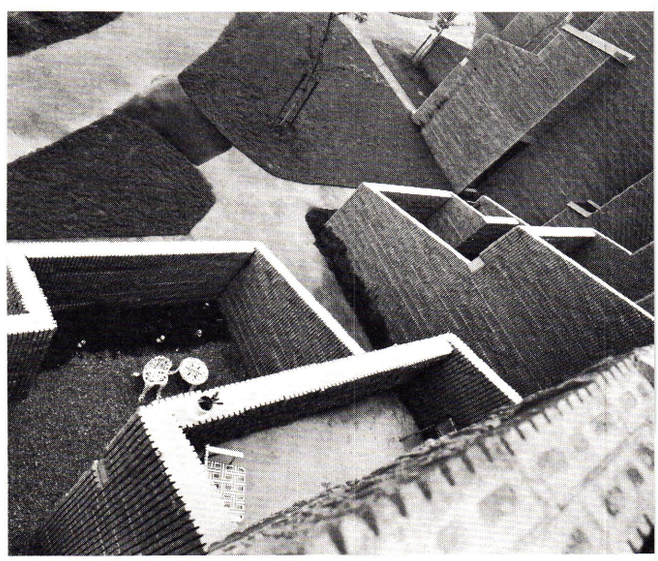
time. Their addition to the end walls breaks up what would otherwise be large blank surfaces, and the tiny roof over each new width echoes the roof slope of the main space. With these formal devices, Rudolph makes this recognizably his work.

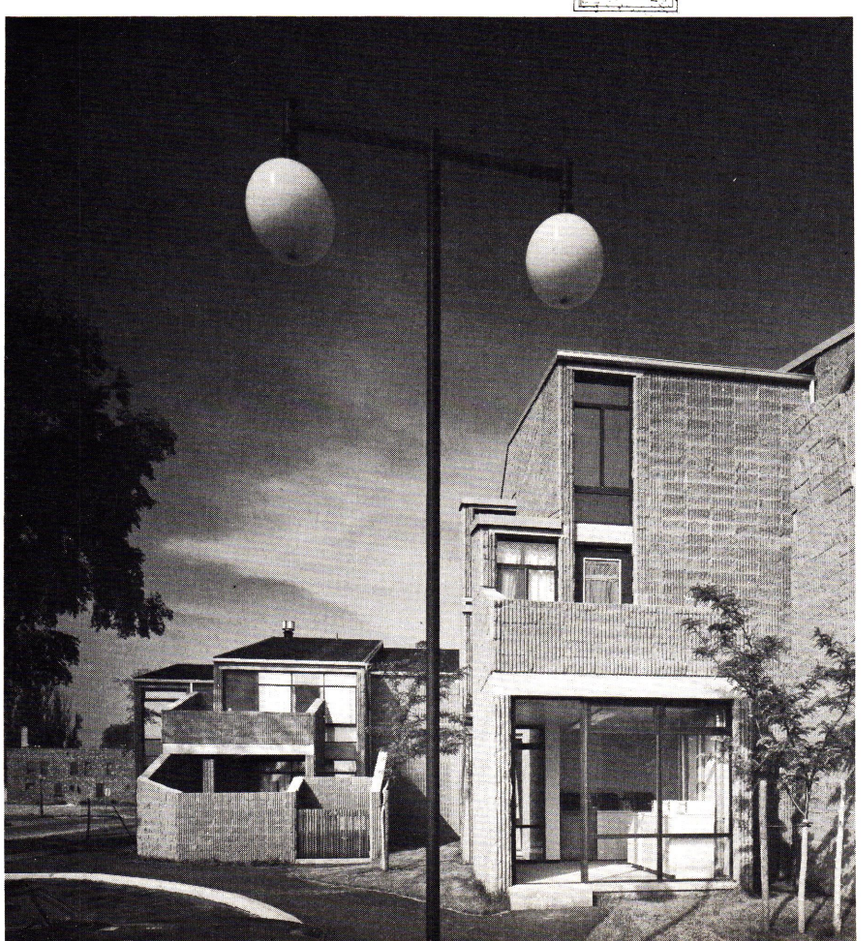
Individuals from Edward J. Logue on down were personally involved in this early UDC development, but the designated project coordinator was Andrew Goldman. His work was similar to the preliminary involvement of the UDC in all its projects before an architect is selected: they ask whether a project is needed, if so, *what* is needed, if it can be made financially sound, and what early budget figures might be appropriate. Then a request is made to hire an architect and proceed. In the case of Buffalo's First Phase of 142 units, it is divided into 28 one-bedroom, 102 two-bedroom, and 12 three-bedroom apartments. It has community laundry rooms but no other community or public spaces. The room sizes are based on the FHA minimums in 1970, but the UDC allowed its architects to exceed those minimum dimensions by 15 per cent, still adhering to UDC budget requirements. The UDC required low-rise or medium-rise on the site, but no towers.

Within these parameters, Rudolph's scheme seems clearly superior to the typical government project for low- or moderate-income tenants. The enclosed ground floor patios are large enough (18 ft by 16 ft) for real outdoor living or play. The second level apartments have generous balconies, and the top level apartments (with small balconies) have high and pitched ceilings which add to their volume. Only four apart-





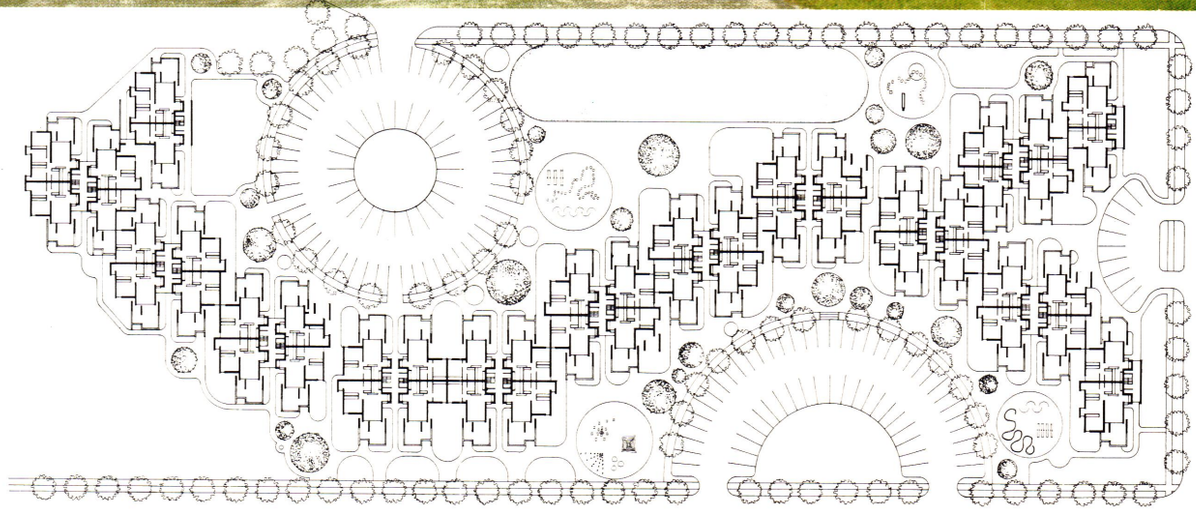




The living room of a ground floor apartment looks out to its patio (top photo, above). The ground floor plan is similar in every way to the second floor plan (above, left) except the balconies become patios. In the plan above, four apartments open onto one corridor served by two sets of stairs, a typical arrangement. The rents of the units are now $122.00 per month for one bedroom, $155.00 for two bedrooms, and $177.00 for three bedrooms (for moderate-income ranges). A certain number of apartments are set aside for rent subsidies from the Federal Government, so that families with very low incomes will have that part of their rent paid that exceeds 25 per cent of their family income. There is a limited amount of such rent subsidy money, of course, so if rents go up (as rents seem to do) the ratio of low- to moderate-income families served could change.

ments enter from any one corridor level (see plan, left) so that 12 apartments share a single front or outside door. There are interior spaces for bicycle storage at every entrance. These units have been rented very quickly in Buffalo, one sign of their meeting a legitimate need and of their appeal over other available housing. The three-bedroom units moved best of all, however, and these larger units for larger families are the most expensive for the UDC to finance, as well as creating other factors to cope with: lots of kids in the project, heavier impact on public schools. The UDC must find a way to provide large apartments for the large families it is required to serve, and arguments about the "cost" of these units in money terms cannot stand in the way. The two-bedroom units have moved slowest in the First Phase, and the second bedroom in these is very small. The UDC has developed its own room size standards now, however; it no longer relies on FHA research. Also, various UDC personnel will soon begin living in one of the apartments on the Buffalo site, for six weeks at a time. These live-ins will occur in all the recently completed projects. It is an attempt by the UDC staff to study the meaning of their decisions in human terms, and it could do more than anything else to improve the next round of UDC housing.

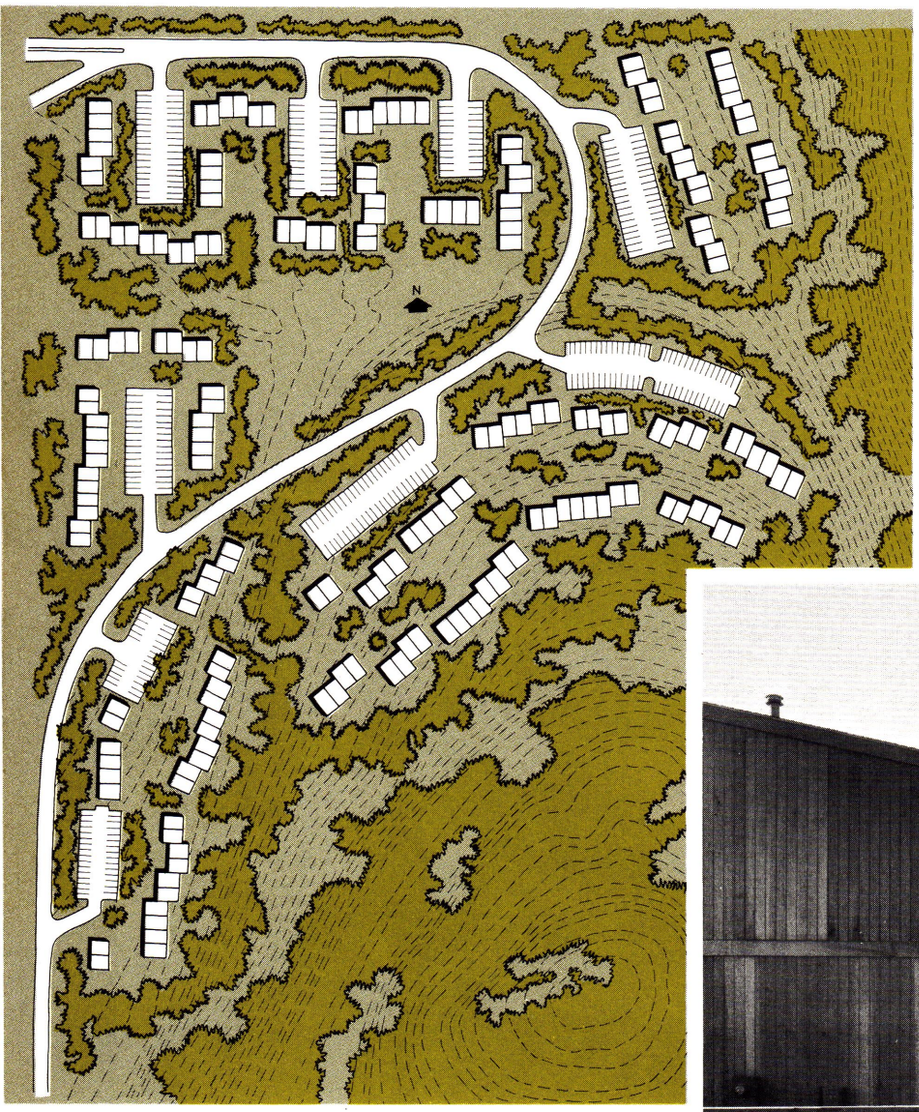
BUFFALO WATERFRONT, Area B, Phase I, Buffalo, New York. Owner: *The Urban Development Corporation*. Architects: *Paul Rudolph—Terrance Mullen*, job captain. Engineers: *Souza and True* (structural); *Simpson, Gumpertz and Heger* (consulting); *Sherry Associates* (mechanical and electrical); developer: *Caldwell Development Corp.*; contractor: *Seigfried Construction Co.*

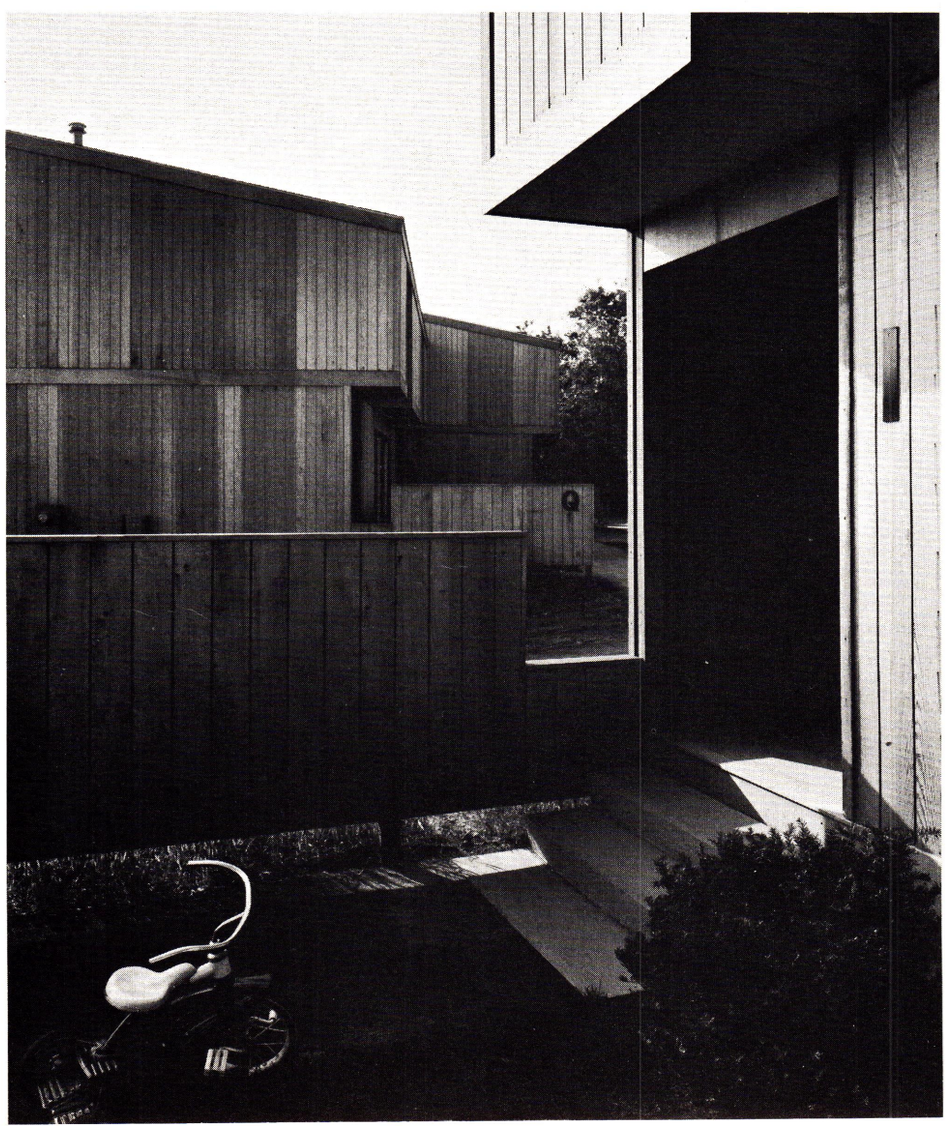


In Binghamton, The Architect's Collaborative has designed idealized housing for city dwellers; with woods, hills, larger interior spaces, and lots of privacy

Like the Buffalo Waterfront Housing, UDC's Ely Park project in Binghamton is low-rise and without elevators, but there are few other similarities. Ely Park is suburban; in fact it is outside Binghamton's city limits and water/sewage service had to be provided by an extension from the city (a vital early agreement finally assuring the feasibility of Ely Park). No one walks to work here, and the parking ratio is one to one. Ely Park housing has been judiciously inserted in a beautifully wooded area, on a hilly site that gives some apartments sweeping views of the valley stretching away below.

The Architects Collaborative envisioned this project as a group of single-family residences placed next to each other, row house style, thus keeping the largest portion of the site in common woods, but with each "house" having its own privately fenced front lawn or patio. The houses were to have been erected with modules made in the factory, brought to the site and stacked up quickly. They lost the modular system concept, and the fenced front lawns, between the start of working drawings and the end



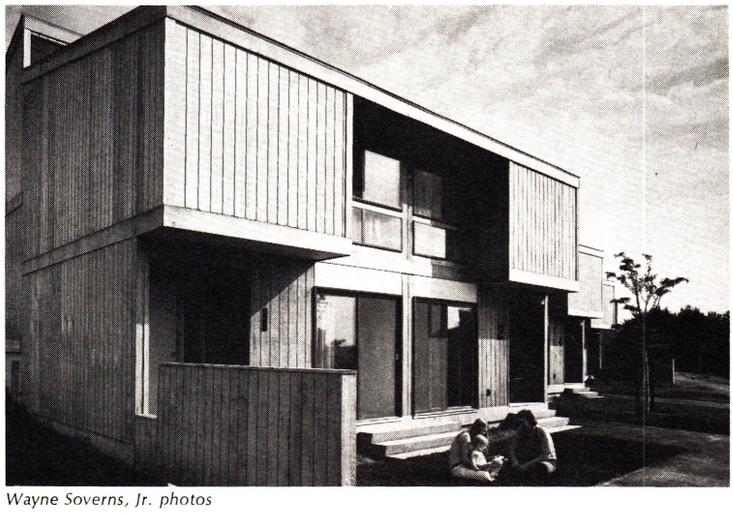


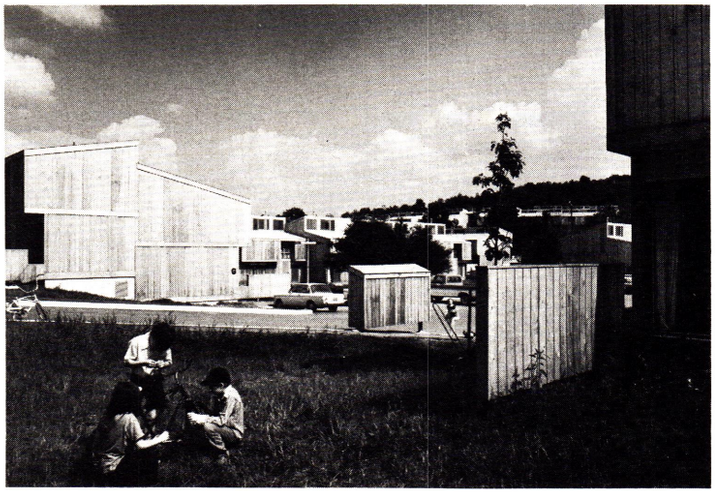
The site plan of Stage I (above) shows how the individual units are clustered near their parking areas, or in line with the contours of the steeply sloping hills. Well less than 50 per cent of the site was suitable for construction because of the slopes, but site work was kept down by careful placement of the buildings. As many trees were saved as was possible, and the area gives the impression of being in deep woods, though it is about a 15 minute drive to the center of Binghamton.

of construction, but Ely Park still has an idyllic feeling: idyllic in the suburban-dream sense of deep woods, wide lawns, rolling hills and a front and back door for the family.

Over 200 units are completed now for Stage One, and another 212 units are soon to be started in Stage Two, using identical construction and site planning. The units are organized in clusters on the site, focusing toward the parking area serving that group (see site plan, left). Each unit has a front door facing a grassy area common to its group of 15 to 30 dwellings. Each unit in the first stage has at least four floor levels and from two- to four-bedrooms; single-bedroom designs on one level will be included in Stage Two. Construction was eventually organized in panels, after the idea of modules had to be discarded for reasons of cost and logistics. These panels were made by National Homes, in their nearby plant in Horseheads, New York, using standard 2 by 4 stud construction: the outside skin of plywood, the windows and most of the doors were installed in the factory, then the panels were shipped vertically to the site in large four-sided trucks, and erected. Foundations and all interior finishing and plumbing were prepared conventionally. The plywood siding is vertically grooved with cedar as the outside layer; the architects detailed carefully to cover all end exposures with cedar boards, as the photos below indicate. This skin has been guaranteed for the life of the buildings and the cedar has been left to weather naturally, with no outside preservative coating.

When you walk inside one of these Ely

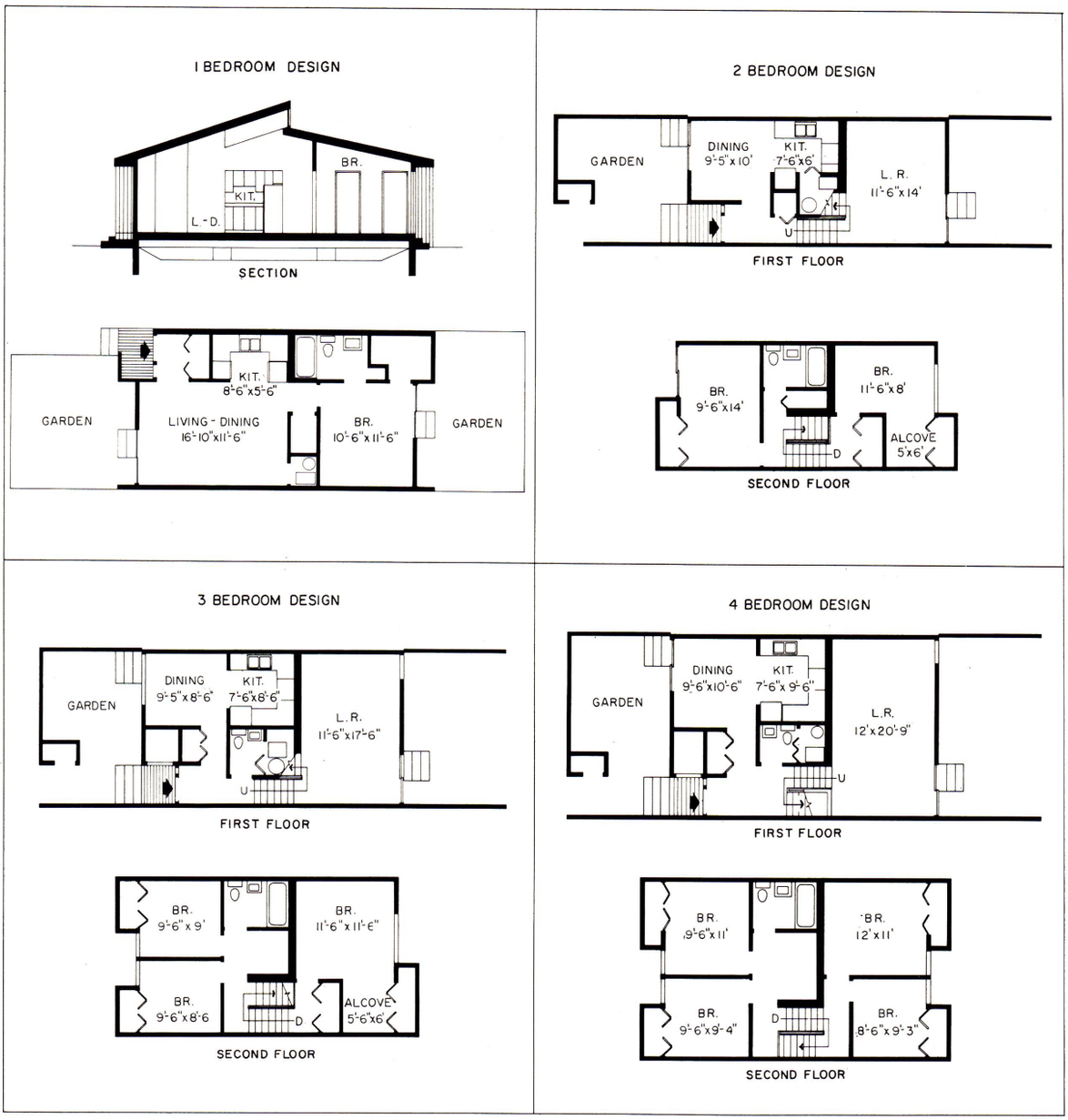


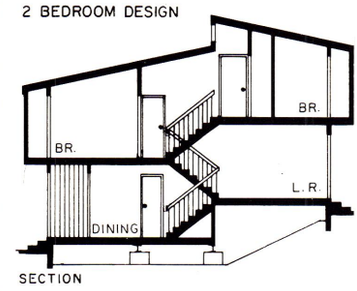


Wayne Soverns, Jr. photos

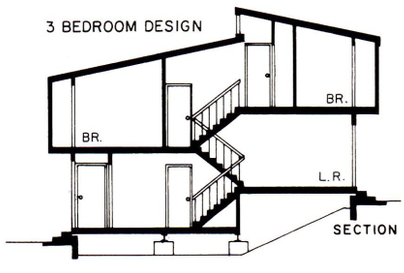
Park units, you recognize immediately the spaciousness of the dwellings (compared to similar UDC housing or other agency housing) and it is worth knowing how this spaciousness was achieved, limited as these and all other UDC apartments are by tight budget controls. If you study the plans and sections of the two-, three- and four-bedroom dwellings (below) you see that the most prominent additions in space are the "unprogrammed" ones of stairwells, entry vestibules and halls. They are unprogrammed in that agency minimum standards (including the UDC's) do not require them. These transition spaces give real privacy control to individuals within each unit and add both real and psychic "living space" to each dwelling as a whole. The amazing thing is, these plans would be regarded as "inefficient" by many designers: too much gross area given over to halls; so many stairs and landings take away from "living" space; if you eliminated these transition areas you may make the rooms larger, and so forth. But they are anything but wasteful in human terms, and designing efficiently to agency standards is, of course, not the ultimate goal.

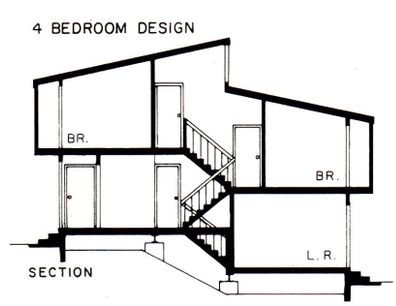
When these apartments were designed, the UDC was using room size standards from the FHA's 221(D)3 program, with allowable increases of 10 to 15 per cent. Using those standards as the base, most of the room sizes listed in the plans below meet them, with some significant exceptions. The second bedroom in the two-bedroom unit is substantially larger than the 80 square feet required (plus 10 per cent), as is the living room and the master bedroom in the

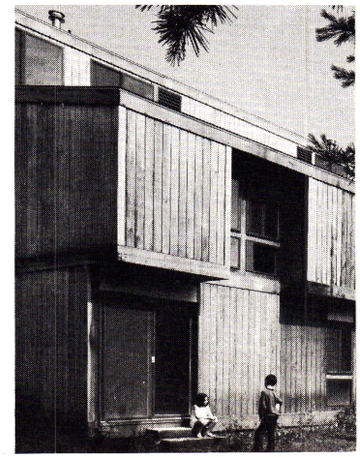




The hallways and upper bedrooms of all units have clerestory lighting, as well as sloped ceilings. There is ample closet space in all floor plans, and three- and four-bedroom designs particularly have almost an extra room in the hall alcove. Some changes have been made in the originally planned services. There are now several large trash enclosures around the site, in place of the individual unit enclosures, and a mail-box island has been located at the entrance to each parking area, as mail is delivered by the rural route carrier.



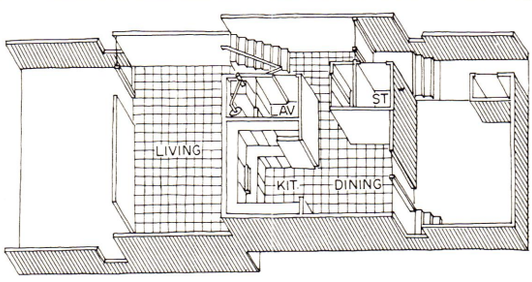


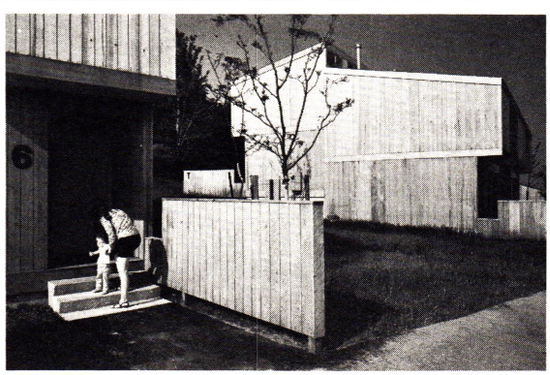


three-bedroom design, and the living room in the four-bedroom design. These additional square footages probably occurred as much from necessities of the internal geometry in the apartments themselves, as much as they did from intentional design, but they are a second part of the reason Ely Park apartments seem so large. The UDC has now developed its own standards for room sizes and relationships, and they are always larger than the FHA's 236 program in net areas, though not as large as New York State's Mitchell-Lama program for "middle"-income families (incomes up to $20,000, sometimes more).

The space benefits built into Ely Park did not cost more than UDC's original budget allowed. On the contrary, the TAC project was well within budget, even before the front yard fences were removed. These are the "garden" fences that appear in the plans of the two-, three-, and four-bedroom units (below, left), but were never built, as the photographs indicate. Removing the fences has opened up the front lawns dramatically, but has reduced the privacy of interior dining areas on the ground floors. Construction cost on the first 202 units was about $4,100,000 and this has allowed the project to be highly competitive in rental rates within the Binghamton market and first units are renting quickly.

ELY PARK HOUSING, Stage 1, Binghamton, New York. Architects: *The Architects Collaborative—Norman C. Fletcher*, principal-in-charge; *Royston Daley*, associate-in-charge; *Gary Lowe*, job captain; *Robert W. DeWolfe*, landscape. Engineers: *Wiedeman and Brown* (structural); *Joseph Schneider* (mechanical and electrical); developer and contractor: *Vincent J. Smith, Inc.*





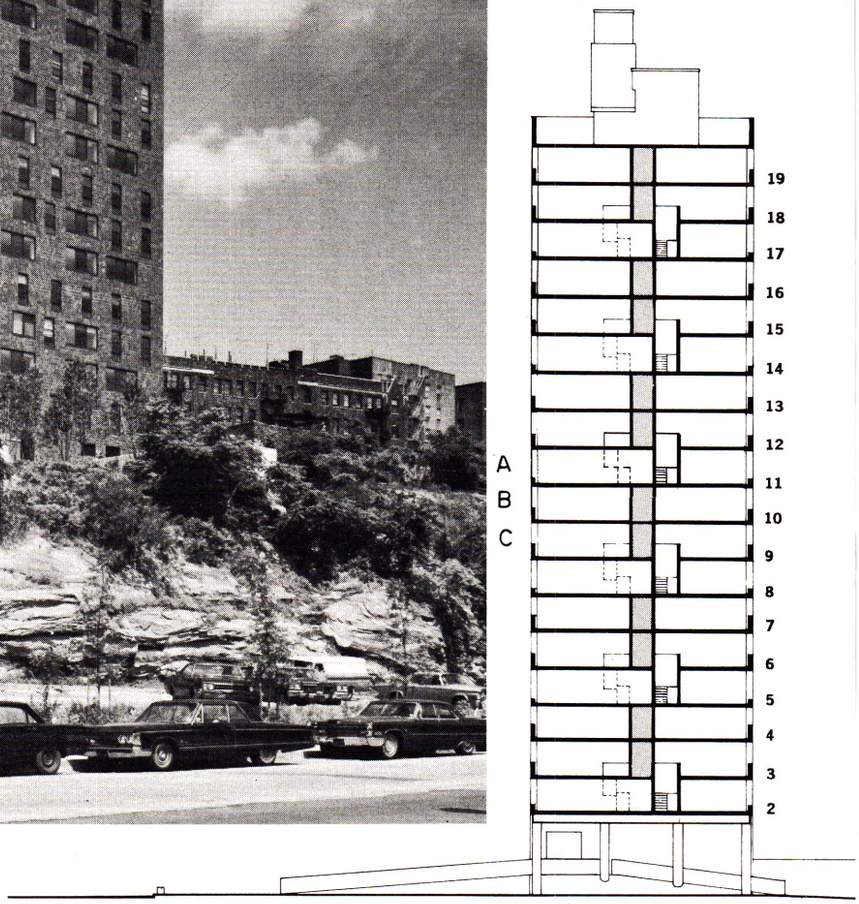
Building new without destroying the old is one idea behind these two projects by Prentice & Chan, Ohlhausen in the Bronx. They focus design on the site planning, rather than on the facades

In the Twin Parks section of the Bronx, New York City, UDC has 13 sites being developed as housing, and all of them are either complete or under construction. The sites were originally identified as acceptable for new housing by a 1966-67 study of the area done by Jonathan Barnett, Giovanni Pasanella, Jacquelin Robertson, Richard Weinstein and Miles Weintraub, and sponsored by the J. D. Kaplan Foundation. This study emphasized the benefits of in-fill housing: of new buildings fitted between old ones, or on small vacant lots, so new apartments could be built without large-scale clearance in the neighborhood. That is the planning basis of the two buildings on these pages, by Prentice & Chan, Ohlhausen, about three blocks from each other. They are among the first to be finished in Twin Parks.

The nineteen-story unit (shown below) fronts on Crane Square, and the location of Tiebout and Folin Streets was shifted slightly to enlarge this square in front (see photo, far right). Both the tower and the nearby medium-rise, central court project on Marion Avenue (pages 156-157) are

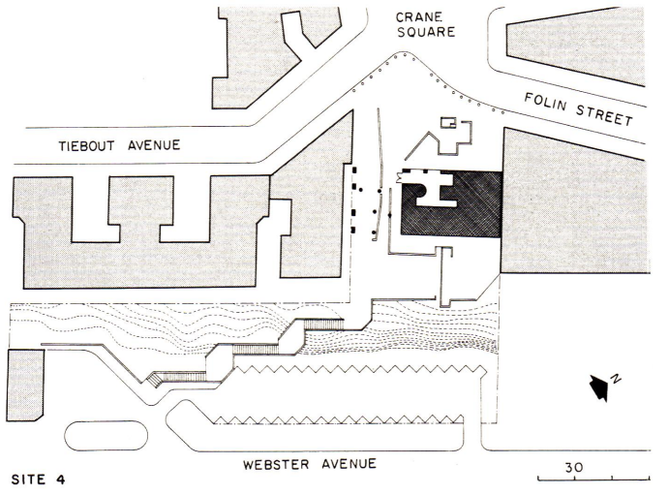
Joseph W. Molitor

The tower project of Prentice, Chan, Ohlhausen faces Folin Street and a small on-site park toward its main approach side (see site plan and top photo, far right). But the tower stands out most prominently from Webster Avenue (photo, left). A steep escarpment runs all along Webster, and a part of the new work was devoted to building a new stairway up this slope, so pedestrians would have shorter cross-town routes. The plans and the section (below) indicate the complexity of the program for this tower, with zero- to five-bedroom apartments arranged as duplexes. One out of every three floors has no public corridor.

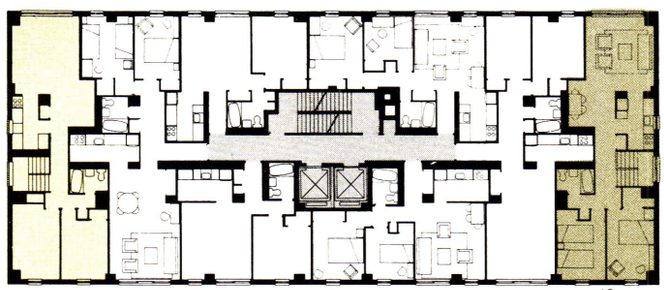


modest buildings above their ground levels: no balconies, no undulating walls. Windows are small because glass gets broken quickly in this part of town. The designers intended these modest facades; they have placed their money on the site and exterior spaces, buying new trees, building protected grassy areas they hope will withstand hard use, and installing substantial street furniture in the form of benches and play sculpture. The Crane Square site has added a new path under the tower and down a steep escarpment to Webster Avenue (photo far left, below), and it is filled with kids on their way to school every morning and afternoon. The tower provides units from zero to five bedrooms, and all the multi-bedroom units are on two floors, as the plans below indicate. This creates large inner-apartment circulation spaces similar to those at Ely Park.

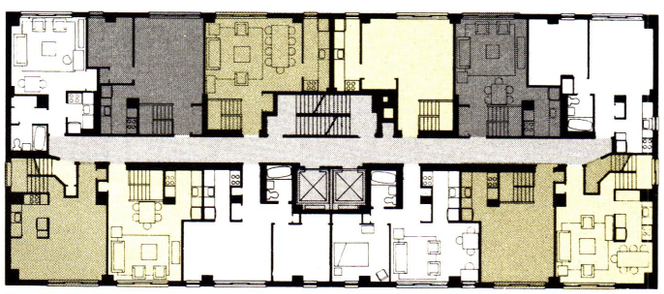
These two Prentice & Chan, Ohlhausen buildings are examples of the stages of development in a typical UDC project, and they illustrate how the agency works with architects. As noted previously, architects are hired for a particular project only after the UDC has investigated a project proposal for economic feasibility, community need for the project, and for its political and social impact. Clear resolution of these issues is never possible, of course: Community hostility to a project can arise at any stage, and cost estimates can get thrown out the window. For example, the Twin Parks Association (an organization of community forces led by Reverend Mario Zicarelli) was originally scheduled as a sponsor to these two projects, but the financial structure had



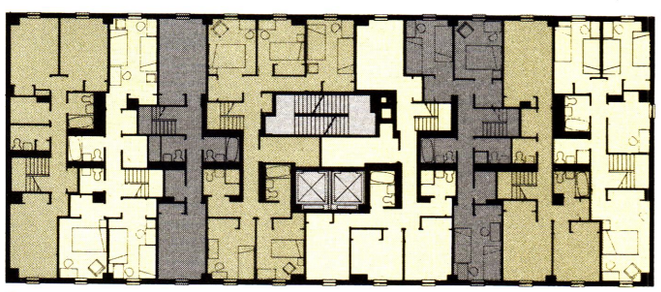
SITE 4



A TYPICAL FLOOR
(FLOORS 4,7,10,13,16, & 19)

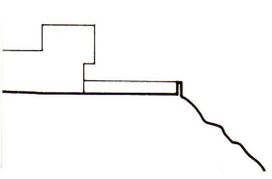


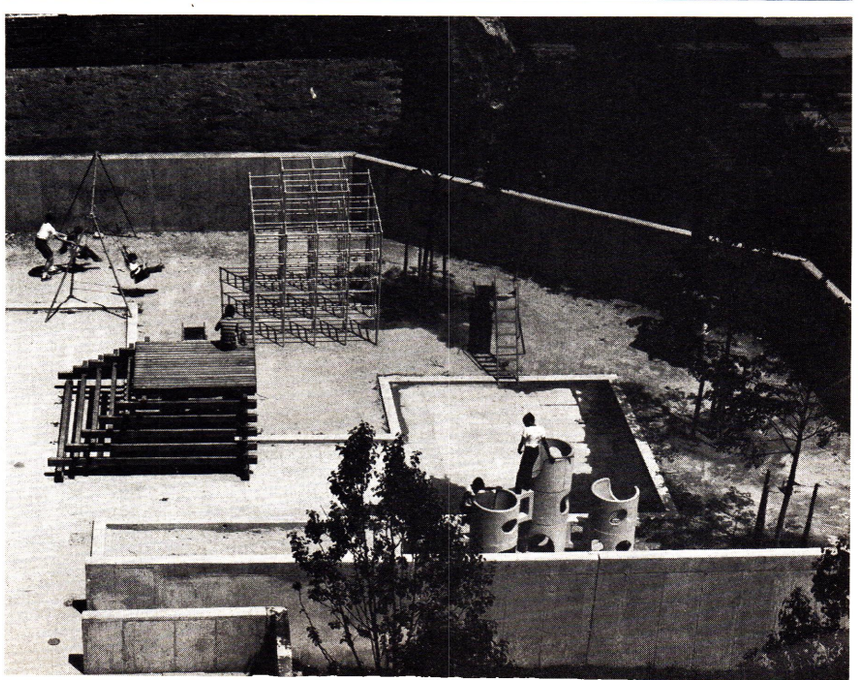
B TYPICAL FLOOR
(FLOORS 3,6,9,12,15, & 18)



C TYPICAL FLOOR
(FLOORS 2,5,8,11,14, & 17)

SINGLE LEVEL APTS.
DUPLEX APTS.



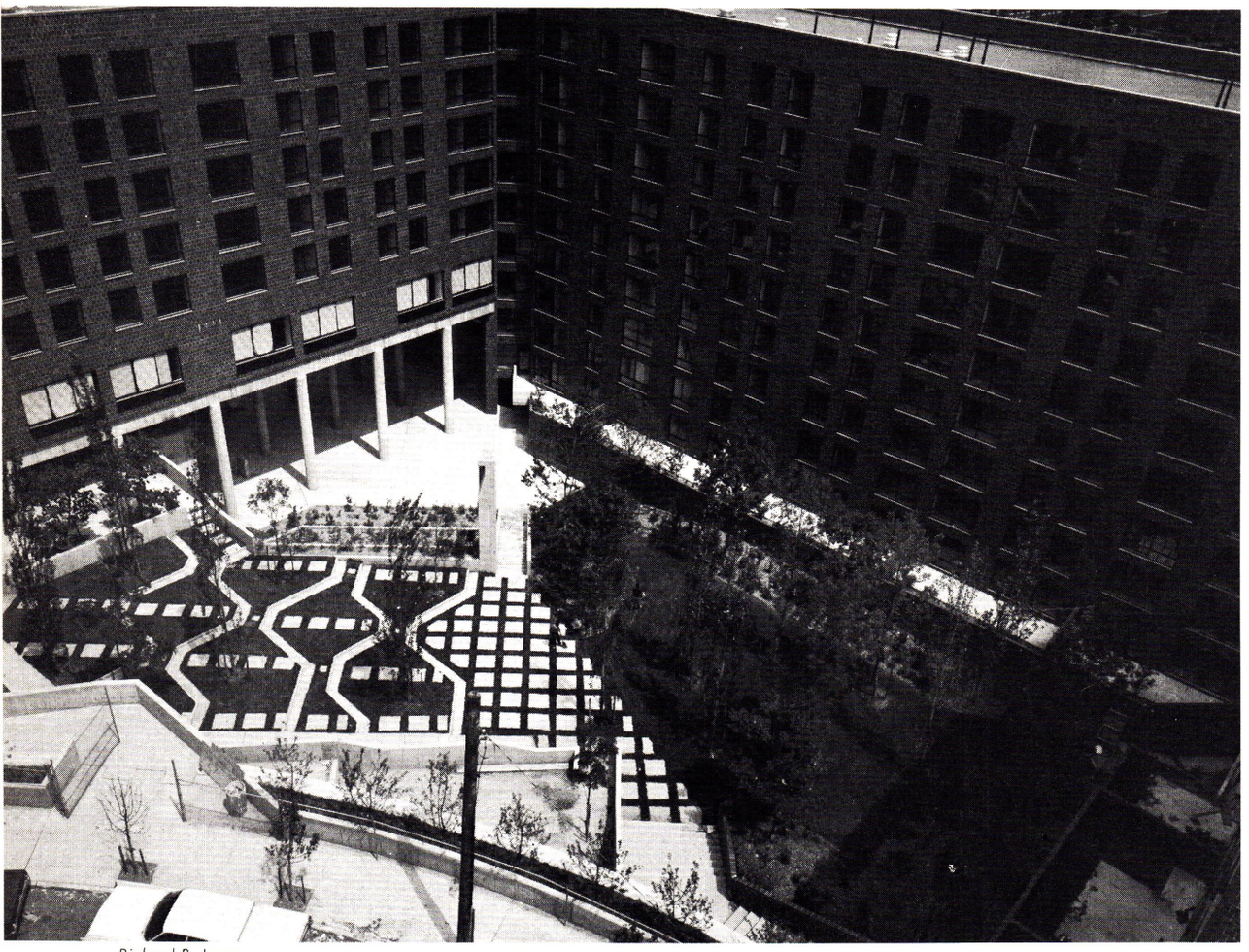


Richard B. Isaacs photos

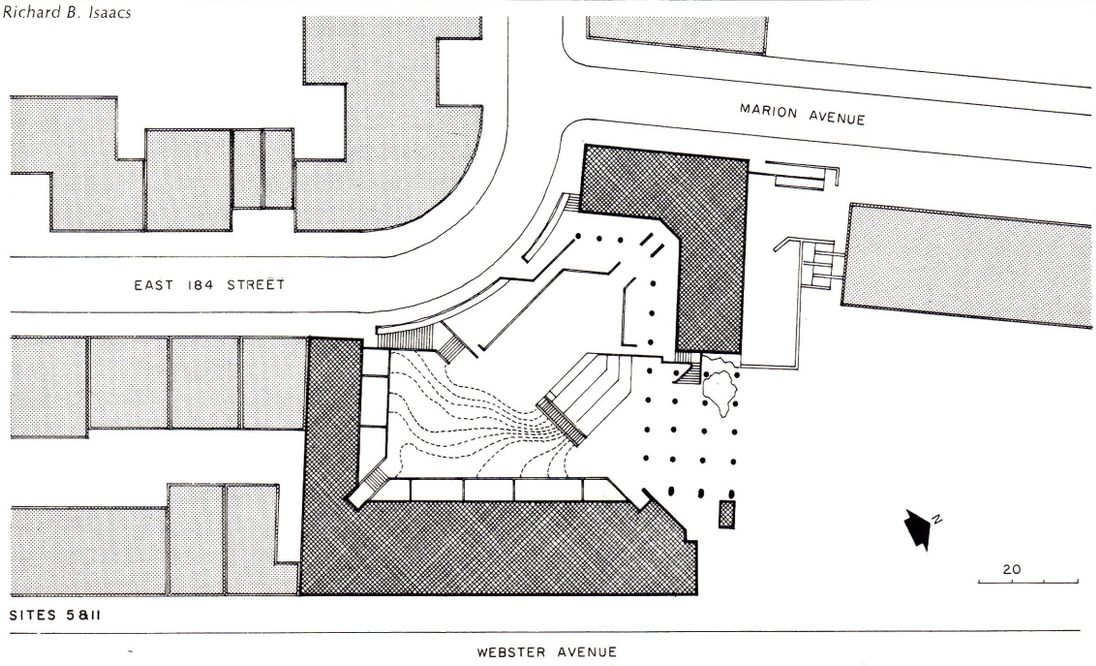
to be reorganized when the association could not raise the money necessary for investment at the beginning.

Today, three people in the UDC have responsibility for saying "yes" or "no" to any architect under consideration: Herbert A. Tessler, chief of design and construction; Theodore Leibman, chief of architecture; and the UDC regional manager in whose territory the project is being constructed. When these men agree, the architect selected is given an orientation to the UDC, and he is asked to evaluate the preliminary program that has come out of the preceding stage. Perhaps the program is altered, depending on the architect's opinions. In the case of the two Prentice & Chan, Ohlhausen sites, the architects began designs under the original program, and were well into it when the UDC and the developers decided to increase the number of floors in both buildings. The architects wanted the height of the courtyard building particularly to remain low, and were required in the end to only raise that building one floor.

As the architect begins his schematic designs, a UDC liaison man with the title co-ordinating architect is assigned to the project. Edward Groder had this title on the two Prentice & Chan, Ohlhausen projects, and he was at that time supervising 12 similar jobs, with a total construction value of $160 million. UDC coordinating architects like Groder are usually young, with architectural degrees and licenses, and they are administrative trouble-shooters; they do no drawing, and do not tell the architect how to design. Groder talks about the great site difficulties at the Twin Parks project, and



Richard B. Isaacs

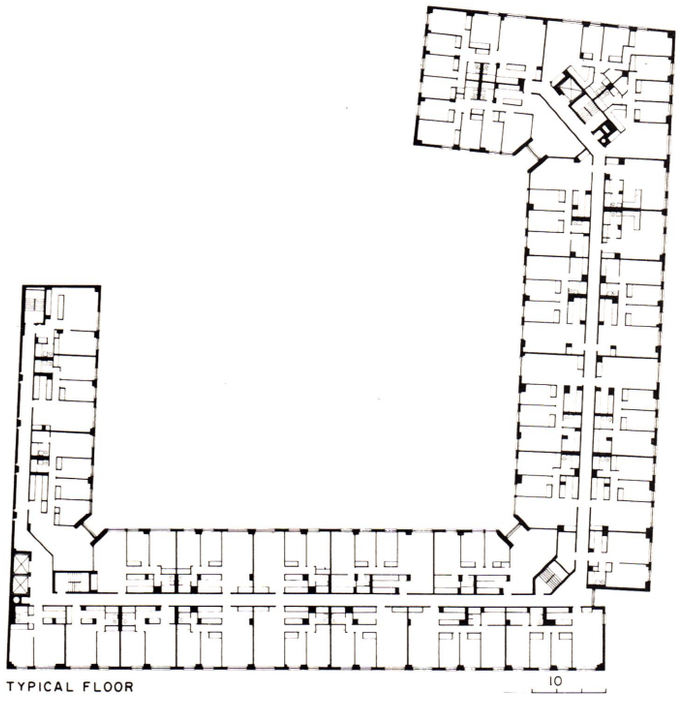


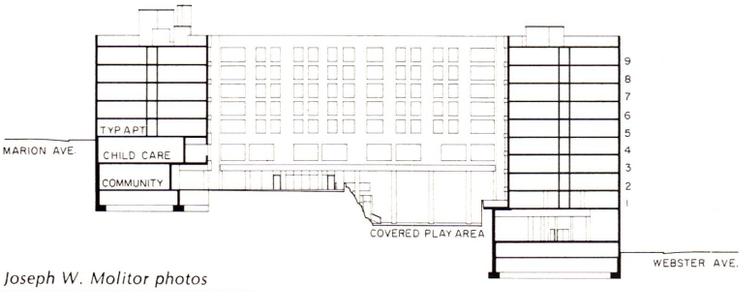
Both Prentice & Chan, Ohlhausen projects have emphasized site planning, and this courtyard scheme is particularly successful. Landscape architect Raymond Schuadelbach has designed an intricate group of terraces and planting areas to meet the steeply sloping site, mixing concrete stepping stones, grass, and shrubbery with the masonry walls of the building itself. A large child care center occupies a corner of the building near Marion Avenue and there is a community room in the project; all of these apartments are on one floor. Site work is just being finished here, and tenants will move in sometime in September. There are 334 dwelling units on both sites.

the terrible problem of designing for the range of bedrooms (zero to five).

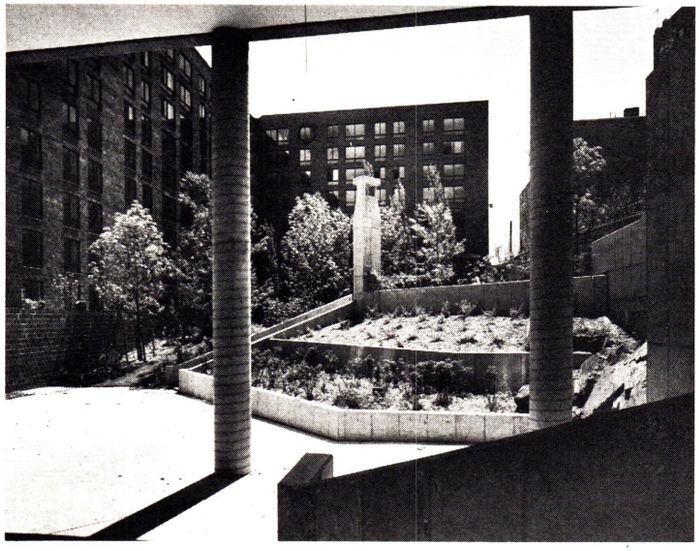
At some point schematic designs are accepted by UDC, and final design/preliminary working drawings can begin. Herbert Tessler is responsible for the acceptance of schematics, with the advice of Theodore Leibman and the Regional Manager. Leibman's office, besides having much to do with the selection of architects, has been developing the new UDC planning and design criteria. His office also conducts research into the behavioral and environmental issues raised by architecture and housing in general, and how the UDC might respond. Leibman says he is particularly interested now in the benefits of low-rise, high-density designs for urban environments (50 to 70 units per acre), in contrast to more typical high-rise developments. He might say, for instance, that the courtyard design below, by Prentice & Chan, Ohlhausen offers benefits over their nearby tower. As other Twin Parks sites are finished, it will become possible for Leibman's office (and others) to evaluate these social ramifications of UDC's work in the area. These "vest-pocket" projects in The Bronx are the strongest attempt to date by the UDC to make a social impact on a major urban residential area.

TWIN PARKS NORTHWEST, Sites 4 and 5-11, The Bronx, New York City. Owners: *The Urban Development Corporation*. Architects: *Prentice & Chan, Ohlhausen*—project architect, *Francis C. Wickham*. Engineers: *Robert Rosenwasser* (structural); *Jack W. Barrett* (mechanical/electrical); landscape architect: *Raymond T. Schnadelbach*; developer: *D-U First Realty Co.*; contractor: *Kreisler, Borg, Florman*.





Joseph W. Molitor photos

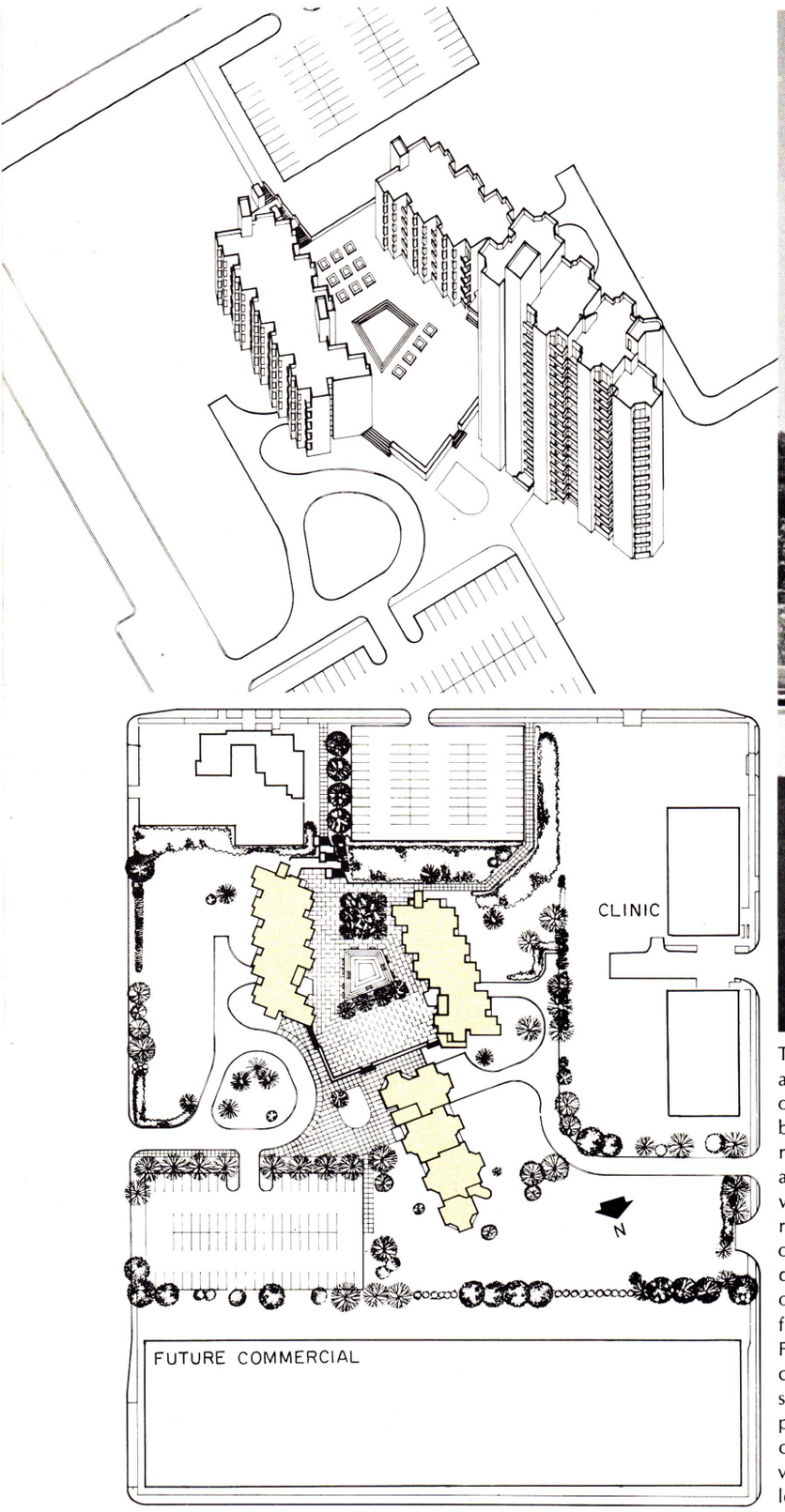


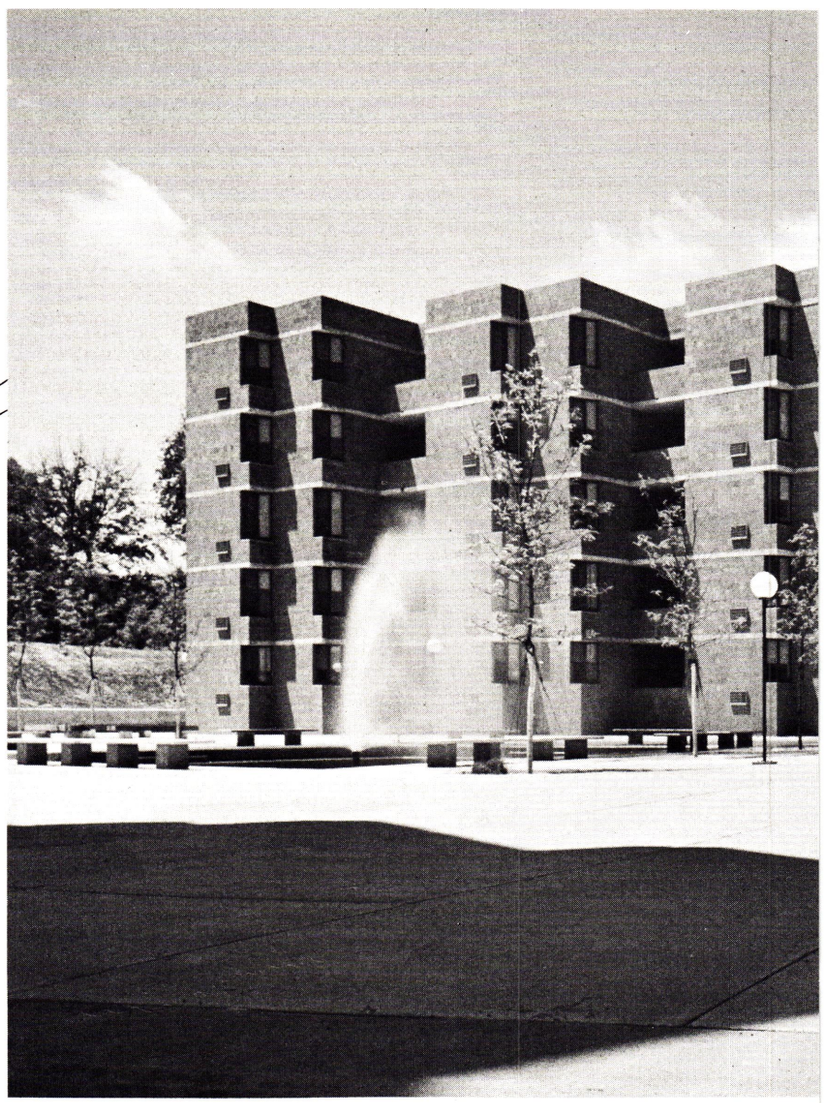
Kennedy Plaza in Utica has brought a new image to the city, and Ulrich Franzen's project is a good test of the construction breakthroughs sponsored by UDC

Kennedy Plaza apartments are within immediate walking distance of downtown Utica. It is a higher density development than the Buffalo Waterfront, but like Buffalo, the housing has an "image" impact on its city. It is prominently placed at the business center and it is "new" in a city that hasn't had much modern architecture. In Utica's case, the UDC housing project is also tall, one of the two or three highest buildings in the area.

The best part of the apartments from the tenants' viewpoint is the balconies. The UDC did not ask for balconies in their program, but Franzen was able to provide rather large ones for every unit; all are at least 55 square feet in area, inset for privacy between neighbors, and accessible by large sliding glass doors off the living rooms.

Franzen's intention here was to break up the facades of his buildings and break up the lengths of their corridors in order to make both more humane in scale, less boring and less easy to comprehend than "boxes." This is accomplished by sliding the apartments out of line with each other



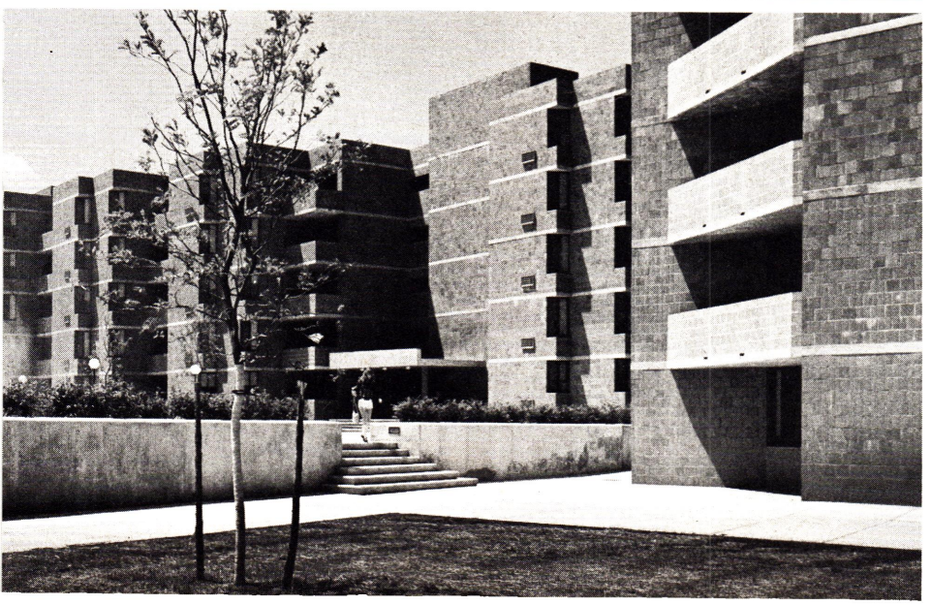


The site plan (left) shows ample parking (two units per one car). The project is two blocks from the main business section, and some tenants will obviously walk to work. The project is surrounded on two sides by older single-family residences, and there was some opposition to the project from these Utica residents. Franzen, as well as UDC officials, were on local television several times explaining the project, and there were many community meetings. An advisory council of community leaders was also organized

in plan and carefully inserting the balconies; the internal organization of the apartments very definitely generates the facades. All of the apartments in both low-rise sections (photo below) have two bedrooms, while the 17-story tower (color photo, below) is composed out of zero- and one-bedroom units. Thus, we see a clear difference in design philosophy with the preceding Prentice & Chan, Ohlhausen buildings, absolutely visible in the photographs. In spite of its planning intricacy, there are no great structural tricks at Kennedy Plaza. The buildings are the simplest possible flat plate concrete frame with a masonry skin wall.

But the masonry *is* interesting, being laid up with a special adhesive mortar that is stronger than even the brick in tension, if mixed properly. This allows large brick panels to be laid up on the ground and lifted into place, as happened with some of the walls on this project. Or, the masonry units can be placed in the usual way. There is no moisture penetration through this mortar, so with Kennedy Plaza, the walls are built with a dense four-inch brick which allows no moisture penetration either, and cavity walls have been eliminated. This special mortar is one technological innovation UDC has been experimenting with on many of its projects, to speed construction time and cut costs. The other principal technical experiment of UDC's—one used here at Kennedy Plaza—is a single-stack plumbing system that does not require a second pipe running alongside the main waste line. The second pipe is required in ordinary plumbing for ventilation of internal pressures within the system. Instead, a patented

George Cserna photos



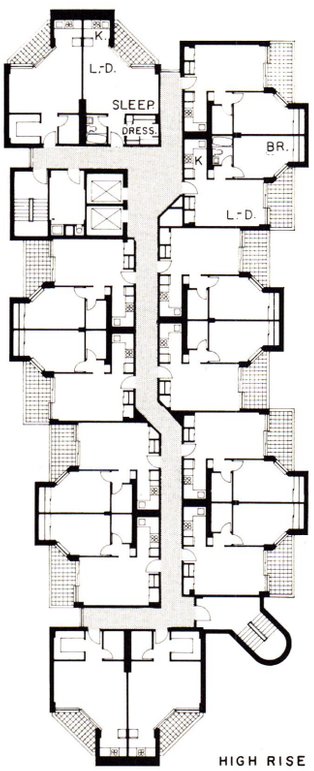
by the UDC (as in most of the areas where they build) to help strengthen the dialogue and determine needs.

The three buildings are placed on the site to help enclose the central plaza (photos left, above), which has a fountain in the center planned for children to play in. The two five-story units have nearly identical floor plans, with only their entrances shifted. On the next page, a furnished two-bedroom unit is shown set up by the developers for prospective tenants. Also shown is the ground floor lobby.

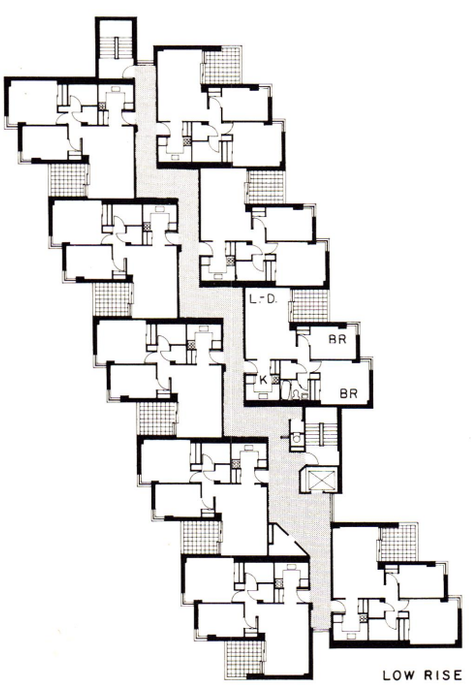
self-aerating fitting is placed wherever a fixture waste pipe meets the main stack, and a special deaerator fitting is used in the basement. The UDC has found this system generally economical, and it seems possible to reduce the usual amount of piping and fittings by at least one-half.

Franzen has tried to make this housing durable with concrete and masonry, and to reduce the hardness of these materials through contrasting site planning and the intricacy of his forms. Today the plaza, which is the focus of the design, is becoming livelier as the tenants begin using it for sitting, wading and an occasional soft ball game. As the trees and shrubbery grow, this will help, too; the most important thing is that the residents so far seem to like living in the newest building in town.

KENNEDY PLAZA, Utica, New York. Owners: *The Urban Development Corporation.* Architects: *Ulrich Franzen & Associates—Samuel Nylen,* associate-in-charge. Engineers: *Aaron Garfinkel & Associates* (structural); *Benjamin & Zicherman* (mechanical); developer: *CDC Utica Inc.*; contractor: *Sofarelli Associates.*



HIGH RISE



LOW RISE

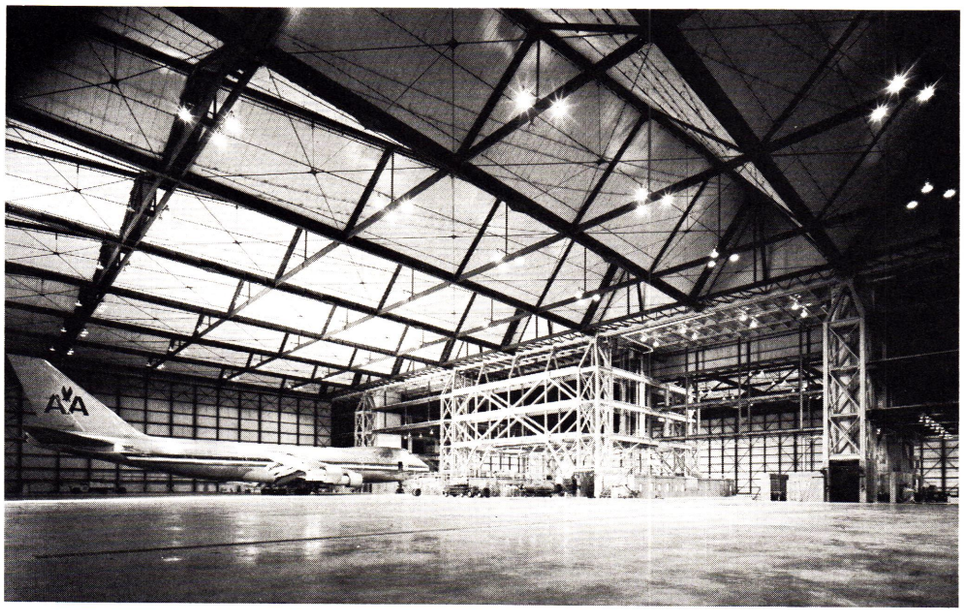
New approaches to the fire protection of steel

by Richard L. Tomasetti, vice president of research, Lev Zetlin Associates, Inc., Consulting Engineers

Conventional methods of fire protection for building structures have been developed gradually over the years, and numerous tests have been conducted to check their performance.

Recently, however, many of these conventional methods have been inappropriate for certain building types and for certain new types of building design. One example is the increased use of exposed steel. There are few common fireproofing materials that develop a strong durable surface that can withstand weathering. Most readily available fireproofing materials are used in building interiors where there is little exposure to moisture and temperature or wear and tear. Now fireproofing materials are needed that not only can be applied fast, are durable, and are economical to apply, but also can withstand the weather.

Large open parking garages are an example of one type of structure requiring such improved fireproofing materials. These garages must be fire protected but at the same time most of their structural components are exposed to weather. Even worse, the underside of the decks often are subjected to scraping of radio antennas and other defacement, which can easily damage fragile fire protection materials.



Hangar roof—a new concept—could be left exposed.
This type of hangar, used by American Airlines in San Francisco and Los Angeles for 747's is provided with a highly effective deluge system that permits the light-gage steel roof to be left exposed. A fire test performed in the hangar itself demonstrated that the detection system and the deluge system could extinguish a fire long before heat could endanger the structure. Three huge water storage tanks are on the site to meet fire department requirements.

Fire protection techniques need to be based upon a total look at the building

Let's briefly discuss how fire protection systems for buildings actually come about. The design professions usually depend on tests and codes in specifying fire protection systems for their structures. Too often this limits the range of solutions that could be applied. Rarely do designers analyze the *total building* for fire protection in a systems manner.

The more progressive design firms, however, are moving away from stereotyped approaches. There is a need for a design and analysis approach in which the behavior of an entire building during a fire is evaluated, as opposed to the approach in which individual components that meet prescribed pre-tested requirements are specified.

I am not proposing that we abandon present testing, however. There must be an evolution from pure testing of individual components to qualified fire design and analysis procedures. One step in this evolution is to start concentrating on testing procedures of modules as opposed to components.

During a fire there is much interaction and movement of various structural members due to temperature effects that can be observed in a test of the total module. We need testing procedures that will essentially test the *approach* to designing that module for fire safety, and provide data which will permit a whole family of similar modules to be acceptable without tests being required on each one every time a minor change is made.

New design approaches derive from (or aid) fire protection requirements

Following are some innovations that have been accomplished by considering the total design problems of fire-protecting a building.

1. The American Airlines Hangars in San Francisco and Los Angeles, designed by a joint venture of Lev Zetlin Associates, Inc., and Conklin and Rossant, feature a completely new light-gage steel structural roof system used as a primary structural system that requires no trusses. That is, the roof surface acts as the roof's structural system.

This article is from a paper by the author presented at a recent conference co-sponsored by American Iron and Steel Institute and Eastern States Building Officials' Federation.

Because of the height of the roof and the deluge system used in the building, fire protective materials were not needed on the underside of the roof. To test this approach, a full-scale fire test was conducted in the hangar, and the deluge system performed to complete satisfaction of the fire department.

2. The Knights of Columbus Building in New Haven, Connecticut, designed by Roche-Dinkeloo, architects, has exposed spandrel beams which was permitted because the spandrel beams were placed approximately 5 ft out from the glass line of the building.

3. Another interesting example is One Liberty Plaza, recently constructed in New York. The building features exposed steel spandrel beams with no exterior fireproofing. The beams are fire-protected on the inside. If a fire were to occur, a light metal shield would deflect any heat escaping between the spandrel beam due to an internal fire. The result is that the exterior of the exposed steel would never reach a critical temperature.

4. U.S. Steel's Pittsburgh headquarters has exterior columns filled with water. As long as the water remains in the columns, maximum temperature can never exceed that of the temperature of water. The heat transfer rate through the steel columns can be calculated and therefore the temperature change through the steel columns can be determined. The maximum outside temperature of the exposed steel is equal to this temperature change plus the boiling temperature of the water at its pressure in the column. The result is a predictable system that can be designed based upon known concepts and heat transfer theories.

Structures normally have been insulated from fire's heat; new materials absorb it

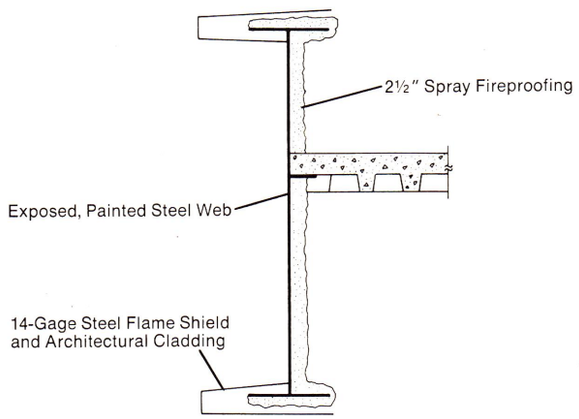
There are two basic methods of protecting steel from heat due to fire. One is with an *insulating* material that keeps heat away. The other is with a *coolant* system that draws the heat away from the steel to prevent harmful temperature buildups within the steel. (An example of this is the previously described liquid-filled columns.)

Most of us are familiar with the *intumescent* paints which have been popular recently. These materials expand many times their original size upon exposure to heat. The expansion of the initial coating causes a porous char which insulates and protects the substrate.

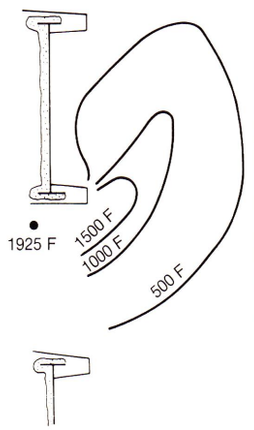
One very recent but not well-known breakthrough is the use of *subliming* materials for fire protection. In sublimation, a material changes directly from a solid to a gaseous state at a given temperature. A large amount of heat is required to cause this change of state, and, therefore the material is effective as a coolant—a heat absorber.

The most common example of such a material is dry ice. We all know it as a solid that constantly changes at room temperature to a gas, and it is a very effective coolant. One primary difference between ablation and sublimation is that ablation is a

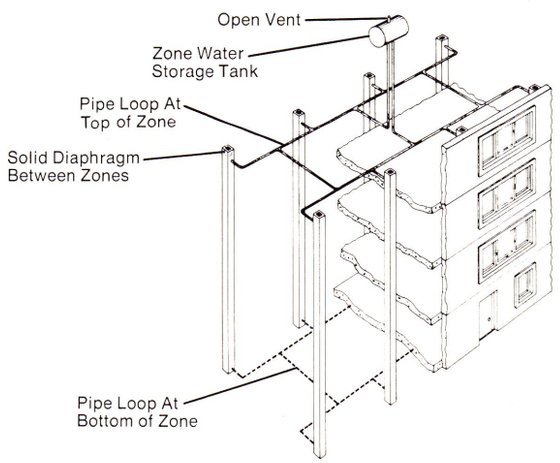
Steel can be exposed if it is far enough from fire source. Spandrel beams in the Knights of Columbus Building in New Haven, Connecticut could be left exposed because of the distance factor—spandrel beams are approximately 5 ft out from the glass line of the building. Data available from numerous European tests show that for an internal fire, the temperature of the spandrel beams remain well within safe limits.



Flame shield for fire protection of spandrel girder on the U.S. Steel building in New York City



Flame patterns during fire test



Schematic arrangement of a liquid-filled-column fire protection system

Insulating steel from fire is traditional, but the new techniques are far from it.

The usual approach to protecting steel from fire's heat is to clad it. But this is costly and means that the structure has to be "covered up." The basic principle of "insulation" can be accomplished by other means, however, as is shown in the two examples here.

The spandrels of One Liberty Plaza in New York could be left exposed on the exterior because investigations and tests showed that a flame shield would deflect fire and keep temperatures within reasonable limits.

Several buildings, including the U. S. Steel Building in Pittsburgh, employ water-filled columns (left), allowing them to be left exposed.

chemical process that occurs at a varying temperature, while sublimation is a physical process occurring at a constant temperature. It is, therefore, more easily predictable. It is this constant temperature characteristic—the known temperature at which the material sublimes—that makes this system a good candidate for fire protection use.

The new heat absorbing materials have intriguing economic implications

The subliming materials may be applied either on the side of the steel facing the flame or on the reverse side of the steel. When the heat of the flame impinges directly upon the *sublimer*, we know that wherever the material exists in front of the steel, the temperature of sublimation, and therefore the steel, is always below this value.

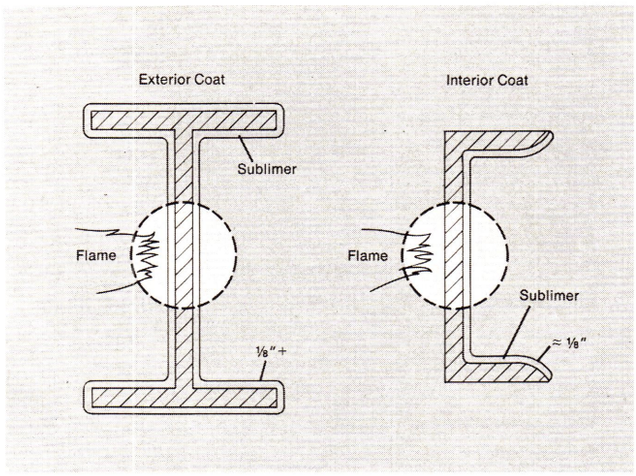
When the flame impinges directly upon the steel, the heat is transferred through the subliming material on the reverse side, which draws the heat from the steel, keeping it cool as the material sublimes. The concept here is parallel to the idea of the liquid-filled steel columns.

An interesting application of the subliming idea was considered for a proposed parking structure at Kennedy Airport designed by Lev Zetlin Associates, Inc. for the Port of New York Authority.

The basic truss concept used tubular weathering steel members filled with a subliming material of lightweight foam. The main truss members were to be prefabricated at a factory, filled with the sublimer, properly vented, and shipped to the site with no danger of damaging the fireproofing. At the site an external coating of the subliming material would be applied locally at the connections. It appears that two-hour ratings could be accomplished with little more than an eighth of an inch coating on the outside of a member. In addition, the material has weathering properties that would permit it to be used on the exterior of a building.

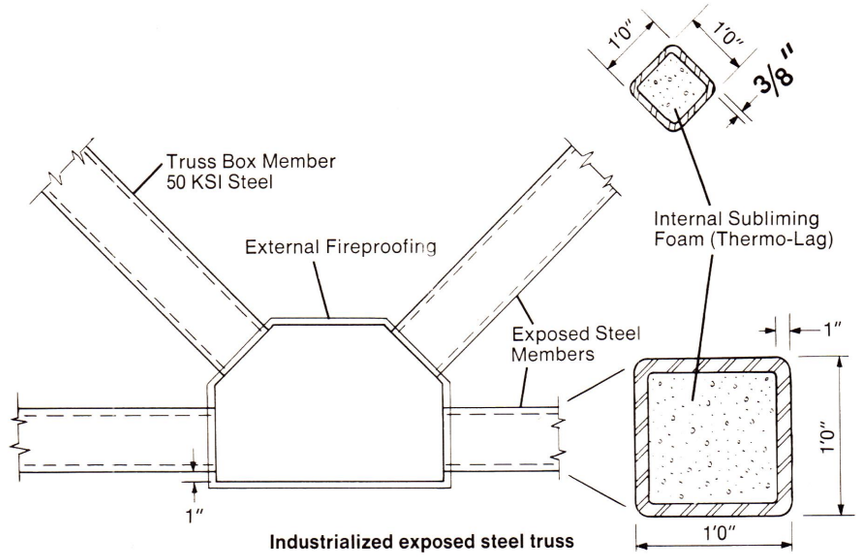
As we look at exterior architectural coatings that also provide fireproofing of steel, we should revise our thinking about economics. Most fireproofing materials previously used have been applied in the field, a process which interrupts other construction trades. With the high cost of labor, we must no longer be alarmed by fireproofing materials that have a high material cost. To encase steel in concrete of finely finished plaster can cost more than $3 per square foot in place. Material costs are a very small portion of this price. Thus, there is a great potential of more sophisticated materials which can be put on easily in thin coats under factory conditions.

I believe in the near future, whether the fireproofing is put on the outside of the wide flange steel members, or on the inside of tubular truss members, we will see the beginning of "industrialized fireproofing." Predipped joists, predipped spandrel beams and interior beams are other ideas that will eliminate costly in-place fireproofing.

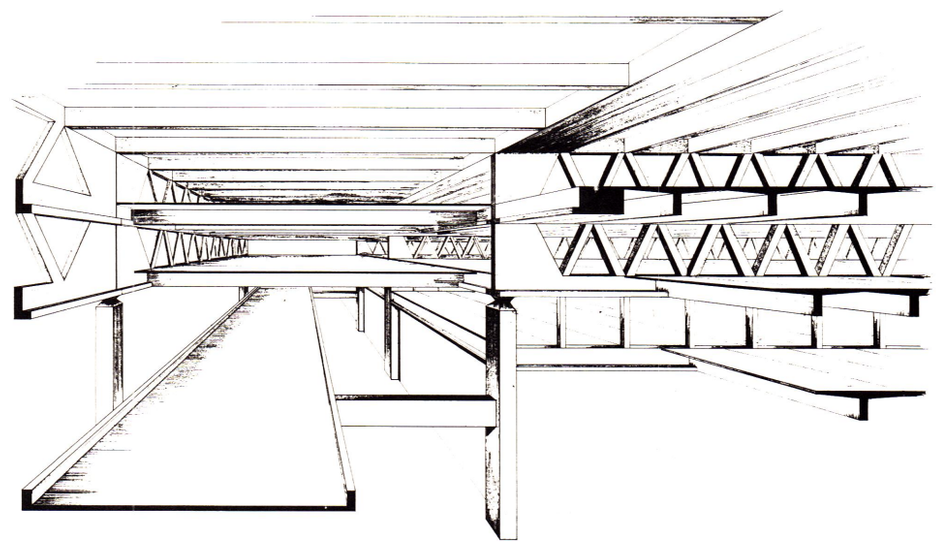


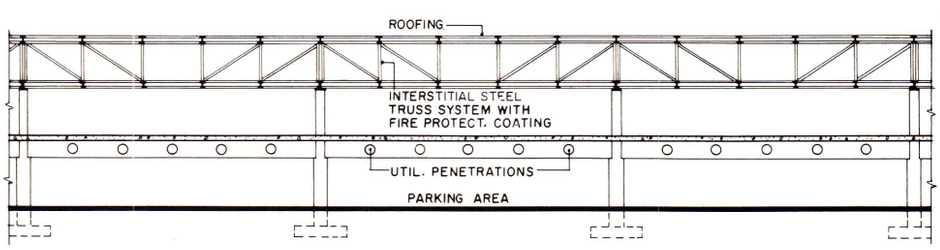
Space-age materials remove heat in the way ice does. A new class of materials called sublimers removes heat of fire by the process known as "change of state"—heat causes the materials to turn from a solid to gas.

The materials are being recommended for such applications as a proposed parking structure at Kennedy Airport (rendering) and for a Grand Rapids Hospital (bottom). Structural members can be filled and/or coated with the subliming material which has an excellent finish.



Industrialized exposed steel truss





Skimping on soils analyses can lead to foundation problems

by E. C. Nordquist, associate professor, Civil Engineering Department, University of Utah

There are times when an architect and/or engineer may ask a soils engineer for a safe bearing capacity for the design of a new building. Both the architect and engineer should be aware that this may be a meaningless request if he asks for bearing capacity *only*, without stipulating the amount of settlement that can be tolerated.

Frequently, during the same request, he may specifically state that no soil samples need be recovered during the drilling operations for testing. He may then state that he is only interested in a copy of the "Logs of Borings" in his report and a bearing capacity value to use for his design.

When no soil samples are recovered from the borings, then, of course, there cannot be any strength tests or compressibility tests performed upon the soils. Without test results with which to calculate bearings and settlement, the soils engineer must base his analysis on judgment and experience. It is true that eliminating the testing program reduces the cost to some degree, but this kind of cost reduction may turn out to be very unwise. A good or poor foundation for a structure may mean the difference between a sturdy building that is structurally safe, or a structure that has large cracks that may manifest either local or general structural damage, with serious consequences.

Allowable settlement of a footing must be considered along with bearing capacity

The soil under a footing may give a bearing capacity with a factor of safety of at least three, but yet the footing may settle from less than an inch to perhaps several inches over a period of time. Most designers are interested in having a reasonable settlement when a given bearing capacity is used; however, this usually cannot be predicted without a testing program and analyses of test results. There may be soil properties that only a test would detect, and the client should not assume that the soils engineer can give him reasonable values without the benefit of test results.

Bearing capacity and settlement are two different subjects but relate to each individual footing. Either the bearing capacity or the settlement may be reasonable by itself; however, to have them both become realistic in relation to each other, they must be considered individually as well as together. If 4.0 ksf is a safe bearing capacity, so then is 2.0 ksf. It may be necessary to design a footing with the 2.0 ksf rather than the 4.0 ksf in order to obtain a reasonable settlement. However, it should be stated that a reduction in bearing capacity does not always reduce the settlement.

The right tests have to be used along with the right formulas to find bearing values

Bearing capacity values may be determined in many ways. They may be found by using a reference such as the Uniform Building Code, by using presumptive bearing capacity tables, by plate bearing tests, by vane shear tests, by calculation, and by perhaps some other means. Each method has advantages and disadvantages. If the strength characteristics of the soil are determined in the laboratory by shear tests, then the bearing capacity may be determined by equation; this, in my view, is the best method. The strength characteristics may also be determined *in situ* by use of a vane shear test; and, then, by use of equations, the bearing capacity may be determined. There are many equations to choose from for the calculations, and one of them is chosen by judgment when some of the soil properties are known. The best choice can be made if the soil samples were obtained for laboratory tests, and if they were obtained from the site by a standard means of recovering relatively undisturbed samples of soil.

It is also very helpful if, at the time of drilling the borings, the "N" values were determined at various depths in the borings. The standard blow counts ("N" values) give an indication of the relative density or consistency of the *in situ* soils within the zone of influence of a possible bearing (shear) failure from an overloaded soil. Mechanical analyses tests will give a grain size distribution from which a better classification of the soil can be made. It is also very helpful to perform Atterberg Limits tests in the laboratory to give an indication of the plastic properties of the soil. These tests make it possible to completely classify the soil, which is much better than a field visual classification.

Presumptive bearing capacity tables and/or building codes do not include all of the important factors that affect the bearing capacity. In fact, they include very few of them. A classification of the soil is first required in order to even use the codes or tables and this is usually only a field classification. Important items that should be considered in determining bearing capacity are such things as the depth to the water table, soil classification at various depths, strength properties of the soils determined by laboratory tests, density or consistency of the soils, depth to the bottom of the proposed footings below the lowest adjacent grade, width, length, and shape of the footings, dead and live loads to be supported by each footing, static and/or dynamic loads.

Let us assume that a bearing capacity has been determined for a project by a presumptive bearing capacity table. How much will one or more footings settle that have been designed from this bearing capacity value? If the settlement is to be determined by calculation, several consolidation tests would have been performed in the laboratory upon relatively undisturbed soil samples recovered from various depths at the site. If the building were to have spot footings 2 by 2 ft, 4 by 4 ft and 6 by 6 ft to support its various loads, and they were designed from one bearing capacity value, it would be found that the 6 by 6 ft footing would tend to settle the most and the 2 by 2 ft footings would tend, of course, to settle the least.

Safe bearing capacities differ with the particular type of footing used

Let us look at another element that has influence on the relationship between bearing capacity and settlement. Perhaps 10 per cent of the total load on a 5- by 5-ft footing is live load, and perhaps on another 5- by 5-ft footing as much as 60 per cent of the total load is live load. Both footings were designed from equal total loads and one bearing capacity. On the average, over a period of many years, the footing that will support the larger percentage of live load (60 per cent) will probably not have as much continuous load on it as the other footing. Therefore, the 10 per cent live-loaded footing has more dead load on it and will tend to settle more than the other footings.

Continuous or strip type footings have similar hidden meanings when the bearing capacity only is requested. In general, the safe bearing capacity for a continuous footing is different from that of a square or spot footing. This factor is not included in many of the empirical methods of determination of a safe bearing capacity value.

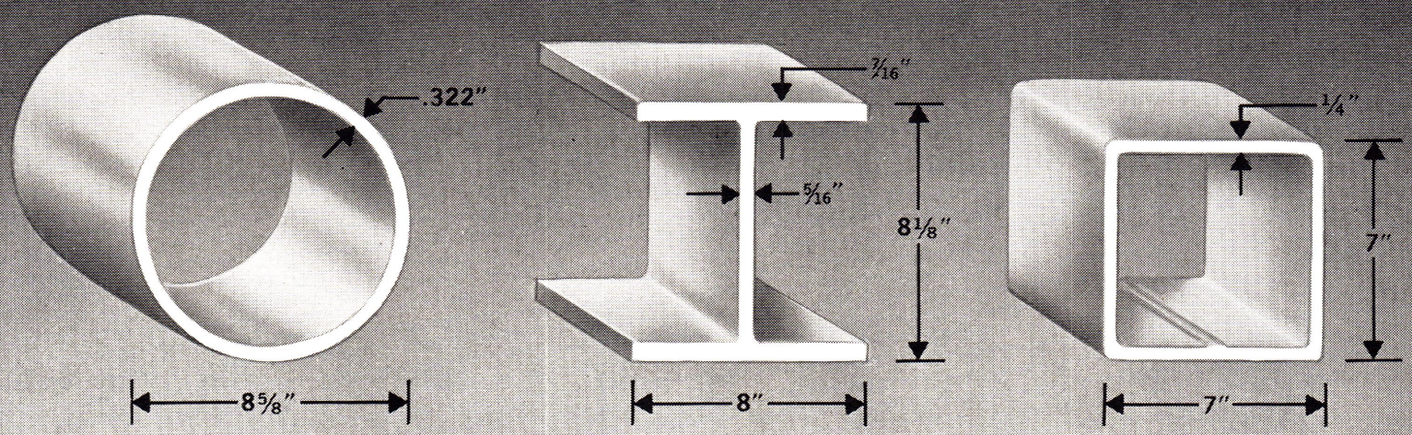
Other types of foundation design may be necessary to obtain reasonable total settlement over the life of the structure, if spread footings seated on natural soil would settle too much. Perhaps an engineered compacted fill placed as a replacement soil could be used, or perhaps a mat foundation or even the use of piling may be necessary. If spread footings are used, it is expected that the largest one would not settle more than the desired maximum amount for the structure. If the maximum expected settlement is not large, then the possible differential settlement would be reasonable. With the use of an engineered compacted fill it may be possible to have a reasonable settlement and to also increase the bearing capacity to some degree.

All 3 of these structural columns do the same job. Which one would you specify?

PIPE
$3.52 per foot

WIDE FLANGE BEAM
$3.03 per foot

WELDED SQUARE TUBE
$2.57 per foot



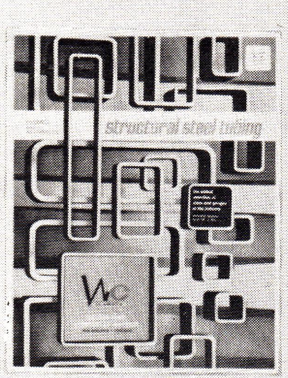
29 lb/ft **35 lb/ft** **22 lb/ft**

compare these price/weight advantages of square tubing over wide flange and pipe sections! Ask us for further facts and figures!

MINIMUM YIELD STRENGTH

PIPE	36,000 psi
WIDE FLANGE BEAM	36,000 psi
WELDED SQUARE TUBE	**46,000** psi or **50,000** psi

ask for our new brochure



WELDED TUBE COMPANY OF AMERICA
SHUNK & VANDALIA STREETS
PHILADELPHIA, PENNA. 19148 • (215) 336-2000. TWX: 710-670-0488
1855 EAST 122nd STREET
CHICAGO, ILLINOIS 60633 • (312) 646-4500. TWX: 910-221-1347

For more data, circle 87 on inquiry card

W-105

this new concept may change your entire thinking about roof decks!

A leaking roof deck is not only destructive to a building's contents, but embarassing to the men who designed it. Leaks happen every day. Even on relatively new buildings.

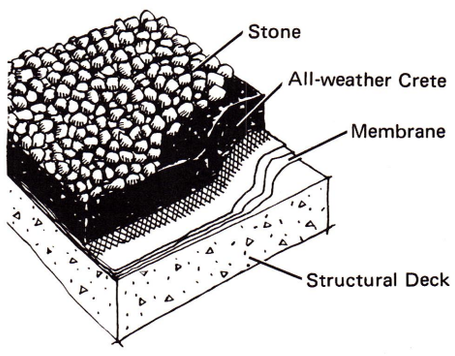
Consider these facts. For a roof deck to leak, there must be a fault or opening through the waterproof membrane. This can be in the form of an accidental puncture caused by man or his equipment.

One of the most powerful forces of nature that affects even the strongest of materials is temperature. The expansion and contraction caused by extreme temperature cycling can in time tear the guts out of most membranes. Whether attached or not, materials must move.

With each temperature cycle most roofing membranes shrink permanently, thus getting smaller and smaller. Cracks occur and membranes tear away from edges and roof protrusions.

There is a solution. A new concept! Simply stated, the principal is to protect the membrane by covering it with insulation. Why isn't this standard practice?

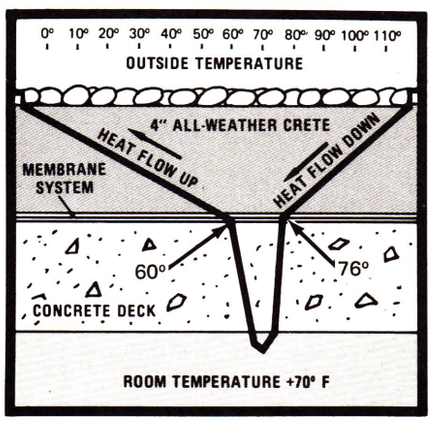
The answer is simple. Except for the age old sod roof principle, there has not been an efficient, modern insulating material tough enough to stand up to the abuse. As a matter of fact, water and freezing will in time destroy most insulations. It's no wonder that for years designers have been protecting the insulation, not the membrane.



The answer is found in a unique insulating material called All-weather Crete. It is composed of sealed cell expanded volcanic rock, one of the world's finest insulating materials, coated with a thermo-plastic binder. It is mixed on the job site and applied over the membrane system. There are numerous membranes on the market that are excellent when protected by this insulation. A final touch is a layer of stone over the All-weather Crete for added protection and decor. Here is how All-weather Crete works to perform these functions:

a) The membrane is always kept warm and ductile. Example:

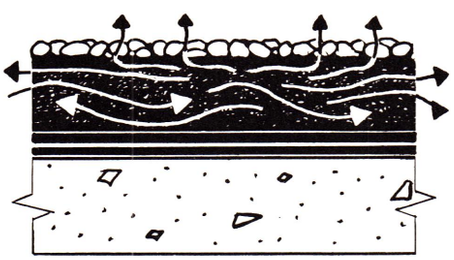
HEAT FLOW CHART



In a severe climate where roof deck temperatures may range from -10° to +120°, the membrane insulated with 4" of All-weather Crete will experience only a 16° temperature variation. Thus, the membrane remains "alive" and ductile for years with negligible effects from expansion, contraction and shrinkage.

b) It is applied in various thicknesses providing a tough protective cushion over the membrane. Most accidental punctures will not penetrate through.

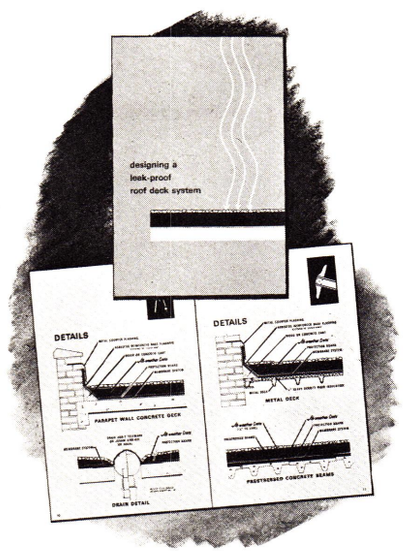
c) Water will never freeze on the membrane. All-weather Crete is contoured to provide slope to drains. There are no joints. Water is drained away naturally! Water or vapors which might enter the system cannot freeze near the membrane and freezing and thawing have no effect even on the surface of All-weather Crete! Furthermore, All-weather Crete transmits vapors.



Vapors entering the system are evaporated out through the surface and never trapped within.

We call this concept the All-weather Crete Insul-top System. Some architects refer to it as the "upside-down" roof. We are beginning to believe it's the only "rightside-up" one. All-weather Crete insulation is a proven product. Most of the nation's successful plazas utilize this concept with the addition of a wearing slab over the insulation to take foot and vehicle traffic. Hundreds of plaza decks are protected with All-weather Crete.

In conclusion: Consider this "New Concept", the All-weather Crete Insul-top System, on your next project if you want the ultimate in a long lasting, leak proof roof deck.



Get the facts. A technical booklet titled "Designing a Leak Proof Roof" contains temperature charts, technical facts and details. It's yours for the asking. Just write Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525. Study it, compare, ask questions - we think you may change your entire thinking about roof decks.

All-weather Crete® Insul-top System

SILBRICO

For more data, circle 88 on inquiry card

PRODUCT REPORTS

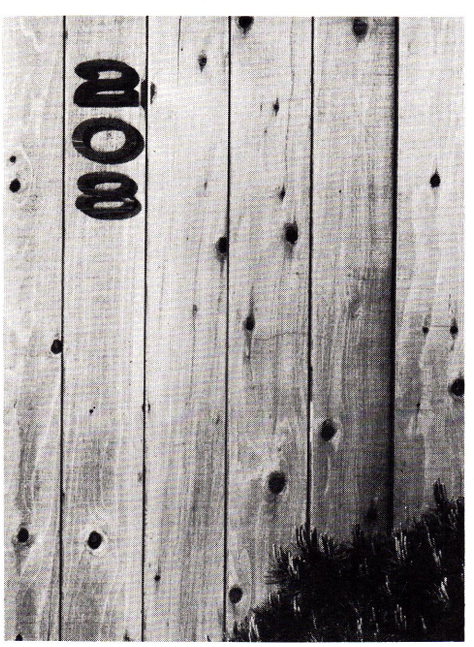
For more information circle item numbers on Readers Service Inquiry Card, pages 255-256

ALL-WEATHER WOOD FOUNDATION / Fabricated of pressure-treated lumber and plywood, this system is recommended for all exterior uses, especially foundations which can be constructed in any weather, any time of the year. The system can be used for both basement and crawl space construction. Preservation will not leach out. It is said this system can save 12 per cent on foundation costs and be erected in one-sixth the time of conventional foundations. ■ Osmose, Buffalo, N.Y. *Circle 300 on inquiry card*

CUBE LIGHT / Recommended for apartments and homes, the plastic cube light is molded in one piece with UV inhibitors. It is available in colors, so that color-coding by lighting is possible. ■ Trimble House Corp., Atlanta, Ga.
Circle 301 on inquiry card

SHEATHING-INSULATION FOAM / It is said this lightweight board provides sidewall insulation equal to or better than conventional sheathing and batt insulation. The 2-ft by 8-ft boards go over the studs. Tongue and groove joints virtually eliminate leaks. Siding is applied over *Styrofoam TG*. ■ Amspec, Inc., Columbus, O.
Circle 302 on inquiry card

ELASTOMERIC DECKING / Produced for light pedestrian traffic surfacing, *Neolon* decking protects walkways against weathering, moisture and physical abuses. Color-retentive, it will not split or soften at high temperatures. ■ Desco International Assocs., Buffalo, N.Y.
Circle 303 on inquiry card



REDWOOD PLYWOOD SIDING / Water-repellent, this redwood-veneered product is available in rough-sawn textured surface, either plain, reverse board and batten or channel grooves, or a smooth surface. Various sizes are offered. ■ Georgia-Pacific Corp., Portland, Ore.
Circle 304 on inquiry card

more products on page 182

ACRILAN® 2000+

ACRYLIC

IS STATIC RESISTANT

Acrilan® 2000+
ACRYLIC

is static resistant, but it sure adds spark to this library.

At the new Georgetown University Law School, you can touch a doorknob, a switch or a drinking fountain without a flinch.

But there's more to static resistance than that.

Carpets that build up static charges attract dust particles, get dirty quicker and are harder to clean. They get dull and tired-looking sooner, and that would be a shame.

Especially when you see how beautiful they look right now.

The blue is glowing. And on other floors of this new Washington, D. C., landmark, the carpet is handsome in red and charcoal.

Acrilan® acrylic 2000+ makes it easy for interior designers. It has unlimited style potential and colors too. If you want level loop carpeting, some of the best contains Acrilan 2000+, but with this fiber you also have the versatility of higher style.

Here you see it in heavy-duty use, with 42 ounces of resilient Acrilan in every beautiful yard, packed in at eight rows to the inch.

That's tough construction, with a tough fiber.

For more reasons to specify Monsanto's Acrilan 2000+, turn the page and check the facts.

They speak for themselves.

ACRILAN® 2000+
ACRYLIC

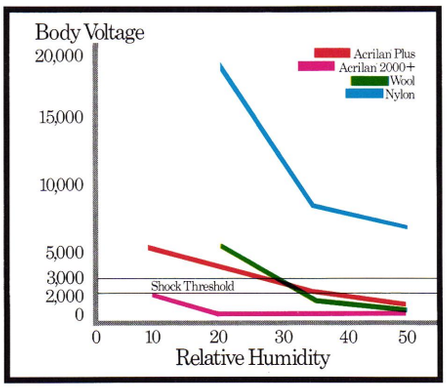
FACTS TO HELP YOU SPECIFY ACRILAN®PLUS AND ACRILAN®2000+

ACRYLIC

ACRYLIC

DURABILITY

In the many tests that measure durability, including abrasion and stair wear, Acrilan Plus and Acrilan 2000+ outperform wool by at least 30%. But durability means more than abrasion resistance. It means the ability to keep a rich, new look despite a long period of hard traffic and difficult soiling and fading conditions. Acrilan was first introduced in carpeting fifteen years ago. Many of the original installations are still in place, still look young and beautiful. And that's the best proof of durability.



STATIC RESISTANCE

Acrilan Plus offers exceptionally low static build-up and discharge rate. But where this factor is of great importance, specify Acrilan 2000+. Under normal conditions, carpets of Acrilan 2000+ are virtually static-free. This eliminates discomfort from touching metal objects and cuts down on interference with delicate electronic equipment. It also makes for a carpet that stays cleaner, because there is no static build-up to attract air-borne dust and soil.

STYLING

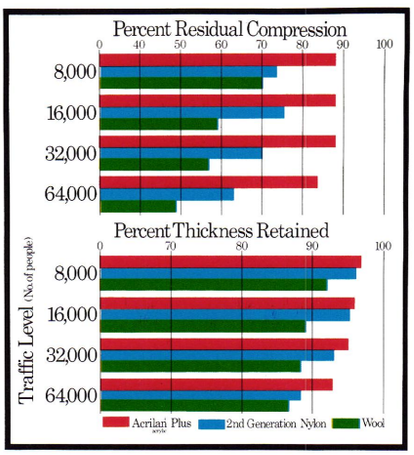
Did you ever notice how similar in appearance continuous filament nylon contract grade carpets are? Carpets of Acrilan Plus and Acrilan 2000+ on the other hand have decorating versatility unsurpassed by any other fiber. Carpets made with Acrilan® acrylic fiber, in fact can be tufted, woven, knitted or fusion bonded in an endless variety of designs, textures and colors that make possible a kaleidoscope of stylings. All this with the added benefit of being non allergenic, moth proof and mildew proof that comes from being a clean synthetic fiber.

EASE OF MAINTENANCE

Acrilan Plus has a smooth, hard surface that gives dirt particles no place to cling to. It vacuums easily and beautifully. It is non-porous and hydrophobic (resists moisture absorbtion). Many spills wipe up without a trace. Acrilan 2000+ has the added advantage of color locked in the fiber. Because each fiber is colored all the way through, even the harshest detergents can be used without any bleaching effect.

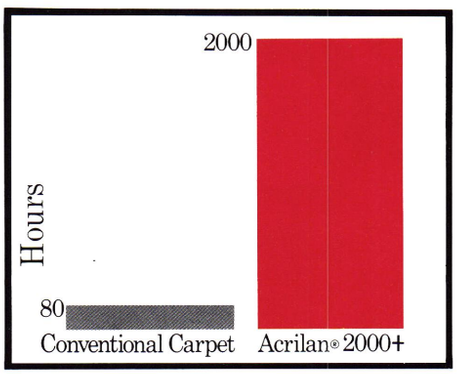
FLAME RESISTANCE

Government standards for flame resistance are currently being re-evaluated. But for now, stringent requirements are still in effect. Hospitals that receive any kind of federal assistance must comply. Jet aircraft carpeting must meet stiff F.A.A. regulations. Many states and localities have their own requirements for schools, nursing homes and college dormitories. Acrilan Plus and Acrilan 2000+ now have built-in fire retarders that give carpet manufacturers the capability of meeting all government requirements.



RESILIENCE

If a carpet fiber is not resilient, does not "bounce back" after compression, the carpet will tend to look worn long before real wear occurs. Acrilan Plus and Acrilan 2000+ have the ability to recover after long periods of compression under heavy furniture, as well as the ability to come back after side compression, such as that caused by heavy traffic.



COLOR FASTNESS

Contract carpeting should have colors that stay bright, don't fade under tough conditions. Acrilan Plus performs well, even where food, drug or chemical spills are a problem. It has good resistance to both acids and alkalis, and can be safely cleaned with any ordinary cleaning agent. For tougher jobs, consider Acrilan 2000+. We tested it with nearly one hundred hospital stains and their solvents without affecting fiber tenacity or color. In sunny locations with large glass areas, there is nothing to beat this fiber. 2000+ is a Weatherometer rating, showing no fading after 2,000 hours of burning noon-day sun. For comparison, the industry standard for normal carpets is 40 hours. The plus in Acrilan 2000+ indicates that some of our colors rate up to 6,000 hours on this standard industry test. So you can see that we are being modest in naming this fiber.

ACRILAN® acrylic PLUS
THE NEW EXCELLENCE IN CARPET FIBER BY
Monsanto

ACRILAN® acrylic
THE NEW EXCELLENCE IN CARPET FIBER BY
Monsanto
2000+

MONSANTO, 1114 AVENUE OF THE AMERICAS, NEW YORK, N.Y. 10036

For additional information circle No. 130 on Readers Service Card or write Monsanto.

Du Pont invents carpet cushion for heavy traffic.

Gas-filled cells won't flatten under load.

Pneumacel is a first.

Structurally, it's a new form of matter—a carpet cushion of tough fibers, each made up of billions of tiny closed cells inflated with an inert gas and air.

Functionally, it's a pneumatic wonder. The cell walls are impermeable to the gas. Yet they breathe air. In and out.

This means that pneumacel never compresses completely. There is always a cushion of gas to give resiliency—even after years of heavy traffic.

Gives carpet longest life, luxury feel.

Pneumacel is the first cushion to combine underfoot luxury with carpet pile protection.

By spreading the load and never bottoming out, it eases the crush on the pile face and the strain on the backing material.

It extends carpet life more than waffle rubber, polyurethane foam, hair-jute or all-hair cushions.

In addition, pneumacel was engineered to give carpet the underfoot feel overwhelmingly preferred in consumer panel tests.

Muffles noise. Retards flame. Won't stretch.

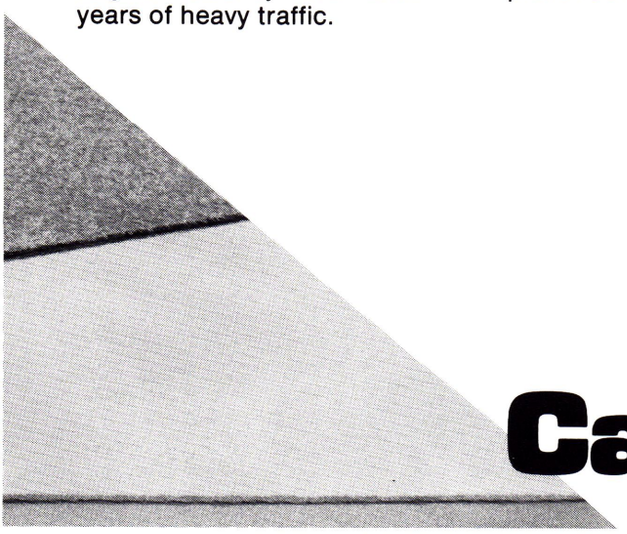
Acoustical tests show that pneumacel transmits the least impact sound of any cushion.

It meets or exceeds recognized industry and government standards for fire retardancy, smoke and fume generation.

Completely stable, it lays flat and stays flat. Won't rot, swell or degrade.

Backed by eight years of testing, it has proved its exceptional performance in a variety of heavy-traffic installations.

Specify pneumacel. It combines everything you want in carpet cushioning.

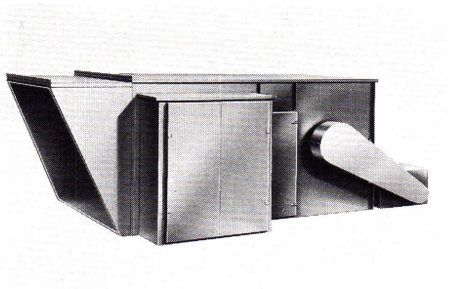


DU PONT
REG. U. S. PAT. OFF.

Pneumacel Carpet Cushion

For more data, circle 96 on inquiry card

continued from page 168

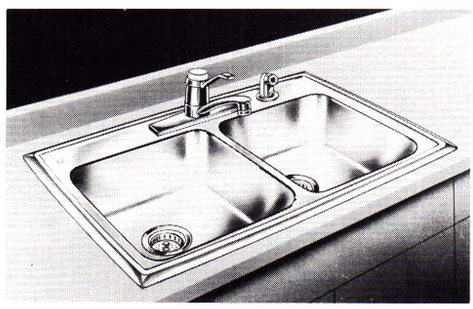


MAKEUP AIR HEATER / Recommended for industrial and commercial heating applications, this model is available in seven rooftop or ceiling-suspended models with an over-all range of 3,500 to 80,000 cfm, with temperature rises up to 120F. ■ The Trane Co., LaCrosse, Wis.

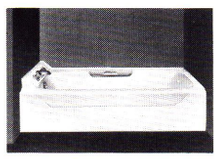
Circle 305 on inquiry card

STAINLESS STEEL SINK / Redesigned rim and deck contours and a new brushed finish characterize the *Harvest* and *Explorer* lines. In the medium-price range, these models are 20-gauge stainless in single- or double-bowl units. ■ American Standard, New Brunswick, N.J.

Circle 306 on inquiry card



PORCELAIN-ENAMELED TUB / An acid-resisting finish on cast iron is featured on this bathtub, 5 ft 6 in. long. Water controls are on a factory-installed, panel-mounted fitting. The tub also includes a safety grip bar-soap holder combination, and a slip-resistant bottom. ■ Crane Co., New York City.

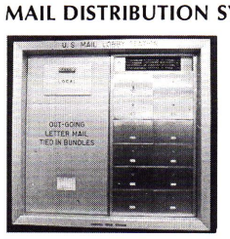


Circle 307 on inquiry card

TRACK LIGHTING / Miniature track lights scaled for home application are 3½ in. in diameter and available in cylinder, step cylinder and spherical shapes, in chrome, white or black and chrome. One-circuit track is ⅝ in. deep and available in 4- and 8-ft lengths. ■ Progress Lighting, Philadelphia, Pa.

Circle 308 on inquiry card

MAIL DISTRIBUTION SYSTEM / A security distribution system designed for use in existing and new buildings, with flexibility provided for additional components. The producer claims personnel are able to increase mail distribution by 30 to 40 per cent. Available in a variety of finishes and compartment sizes and configurations. ■ Capitol Mail Chute Corp., Brooklyn, N.Y.



Circle 309 on inquiry card

Yale products solve almost every security problem you can name.

And some you haven't thought of.
Start with thousands of locks like Yale®. Residential locks. Commercial locks. Auxiliary locks. Cabinet locks. Padlocks. Combination locks. Door *controls*, like door closers, panic exit devices.

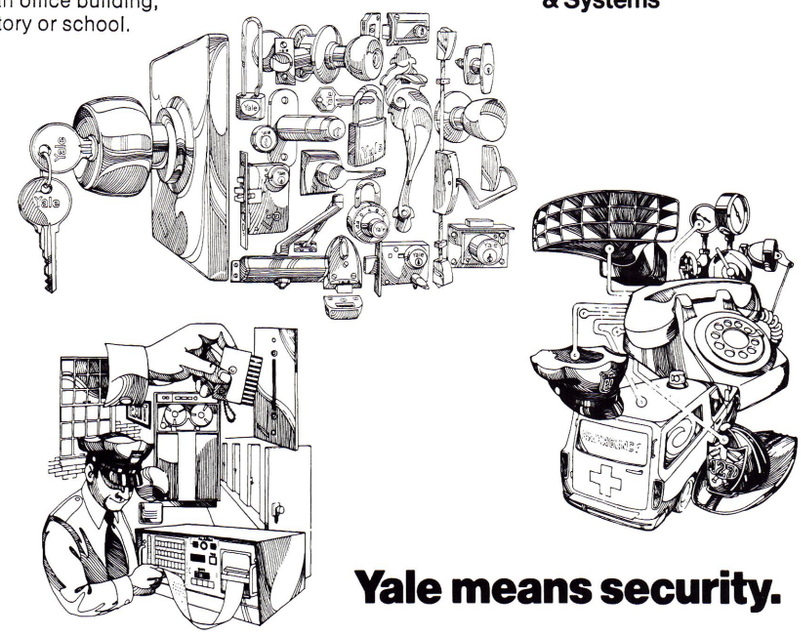
Electric locking systems: Centralized control of building security:
Our Eaton Electric Locking System allows one person to control one or all locks in an office building, factory or school.

Locking systems that tell you who came in. When. And through which doors.
Yale Identi-Logic® Access Control System. Ideal for top secret installations.
But at Eaton security is more than just locking things up.

Intrusion and fire detectors.
Yale® Residential Alarm Systems and infrared intrusion detector gives your home, business, a virtually foolproof, self-reporting security shield.

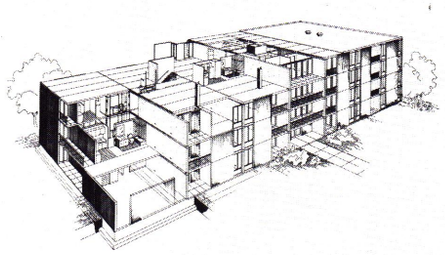
Vault doors, safes and safe deposit boxes.
We make vault doors, safe deposit boxes and night depositories for banks, brokerage houses, etc.
See your nearest Yale Security Representative, or write: M. Keane, Eaton Corporation, Yale Marketing Dept., 401 Theodore Fremd Ave., Rye, N.Y. 10580

EATON
Security Products & Systems



Yale means security.

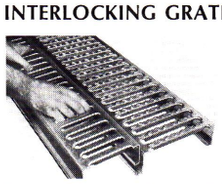
For more data, circle 97 on inquiry card



PRECAST BUILDING SYSTEM / Center-corridor *Vista-space* apartments are designed for low-rise walk-up or multi-story elevator buildings. Units range in size from 400-sq-ft studios to 1,500-sq-ft three-bedroom apartments. Suitable for hotel, dormitory and nursing home designs. Apartment mix and layouts may be altered to fit. ■ Precast Systems, Inc., Chicago, Ill.

Circle 310 on inquiry card

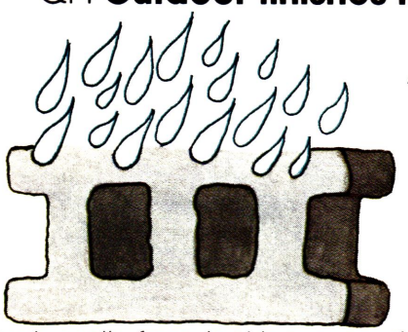
INTERLOCKING GRATING / In 6-in. widths, this unit can combine with previously existing 9-in. width units to form locking units in any width with increments of 3 in. Anti-skid surface. Grating is available in galvanized, stainless steel or aluminum, in lengths up to 40 ft. ■ United Interlocking Grating Div., United McGill Corp., Columbus, O.



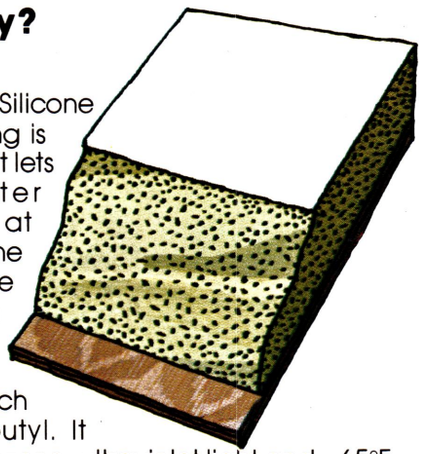
Circle 311 on inquiry card

more products on page 188

Q.1 **What? A leakproof masonry wall?**
Q.2 **What's the closest thing to a truly permanent sealant?**
Q.3 **Who's got butyl beat on urethane foam roofs?**
Q.4 **Outdoor finishes that last 10 years? Really?**

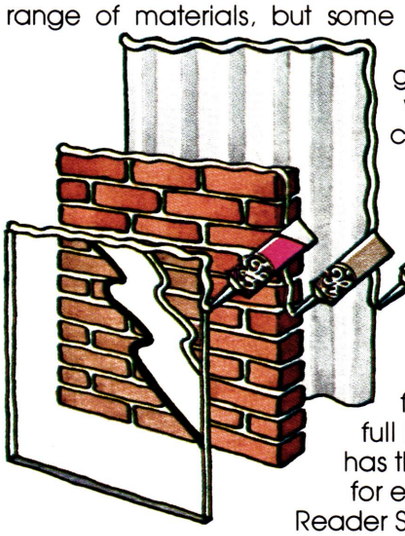


A1 Sure. If it's coated with GE Silicone Weather Coating. It stops masonry, concrete and cinder block walls from leaking even during driving rains. Just roll it on. It won't chalk, blister or deteriorate. And it lasts and lasts for only 4-1/2¢ more per square foot than top quality paint. That makes it a bargain even if you don't have leaks. Circle Reader Service No. 98

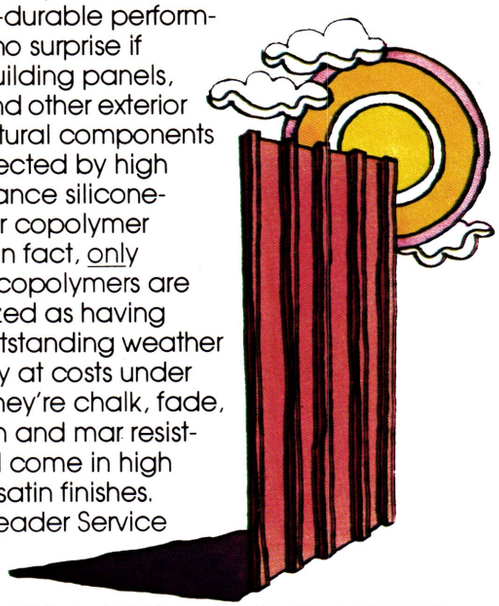


A3 We do. GE Silicone Weather Coating is the only one that lets trapped water vapor escape at almost the same rate as urethane foam, which helps prevent blistering. And silicone lasts much longer than butyl. It shrugs off rain, ozone, ultraviolet light and –65°F to +300°F. Yet, silicone can be sprayed or rolled on at nearly the same installed cost as butyl. For case histories, circle Reader Service No. 100

A2 Any of GE's 12 silicone construction sealants, because they don't compromise anything. They're the most age and weather resistant sealants ever invented. They bond well to a wide range of materials, but some are especially tenacious on glass and metal while others excel on concrete. Some are one part silicones; others, two part. And some are even cost competitive with polysulfide. It's the only full line. So only GE has the best sealant for every job. Circle Reader Service No. 99



A4 Definitely. A decade of maintenance-free, weather-durable performance is no surprise if metal building panels, siding and other exterior architectural components are protected by high performance silicone-polyester copolymer finishes. In fact, only silicone copolymers are recognized as having really outstanding weather durability at costs under 2¢/ft². They're chalk, fade, corrosion and mar resistant. And come in high gloss or satin finishes. Circle Reader Service No. 101

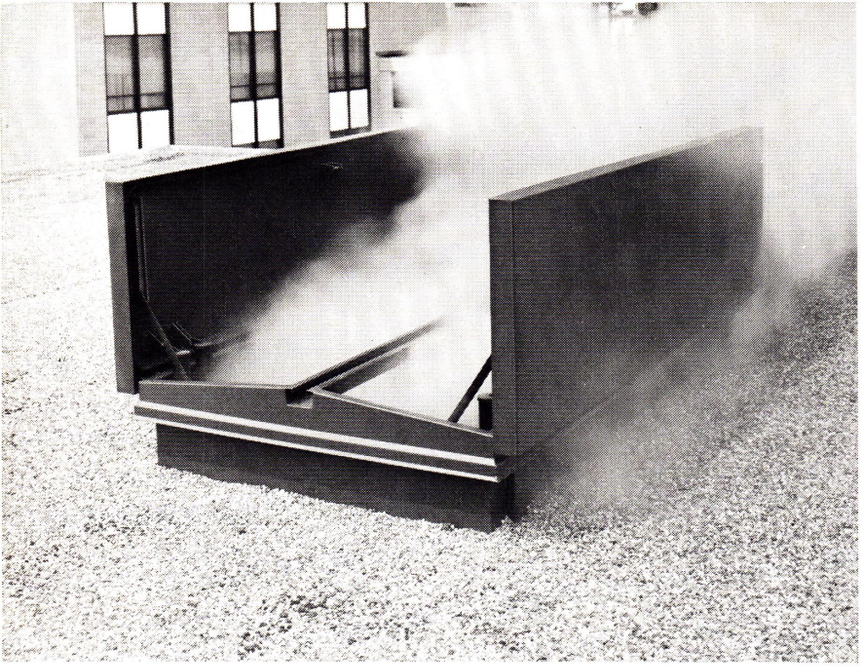


For all the details, write Section BG9370, Silicone Products Dept., General Electric Co., Waterford, N.Y. 12188.

GENERAL ELECTRIC

GE silicones. The answer.

See Reader Service numbers above

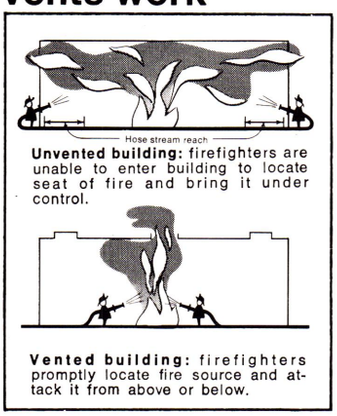


Your Automatic Fire Vent should do a lot more than just vent.

Certainly, installation of automatic fire vents on large, single-story buildings is vitally important protection against a catastrophic fire loss. Prompt venting, vertically through the roof, confines a fire and removes smoke for safer, more effective fire fighting.

However, the right automatic fire vent for your building should do a lot more than just vent. Since the vent may be installed over critical work areas, costly machines, or areas where valuable merchandise or supplies are stored, it must be designed so it won't open accidentally due to wind or other conditions. It should be fully insulated and gasketed to seal out rain and snow. For minimum maintenance, long life, and complete reliability, it should be ruggedly constructed with covers and curbs of not less than 14 gauge steel or 11 gauge aluminum.

How Bilco fire vents work



Unvented building: firefighters are unable to enter building to locate seat of fire and bring it under control.

Vented building: firefighters promptly locate fire source and attack it from above or below.

At Bilco, we build such a vent—a vent that does everything you have a right to expect of it. And we back it with our reputation as the leading manufacturer of horizontal doors. Compare a Bilco Vent with any other on the market, and you'll see what we mean. Meanwhile, write for complete information and a free copy of the National Fire Protection Association booklet, "Guide to Smoke and Heat Venting."

Tested and Approved by Factory Mutual Research Corporation and listed by Underwriters' Laboratories, Inc.

See us in SWEETS, or write for catalog.

Bilco® **AUTOMATIC FIRE VENTS**

The BILCO Company, Dept. AR-92 New Haven, Conn. 06505

For more data, circle 102 on inquiry card

KINNEAR
METAL ROLLING GRILLE

The Recognized Standard the World Over for Shopping Malls

write today for catalog

KINNEAR CORPORATION
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1860 FIELDS AVENUE, COLUMBUS, OHIO 43216
OFFICES & REPRESENTATIVES IN ALL PRINCIPAL CITIES
LISTED IN YELLOW PAGES UNDER "DOORS." ALSO SEE SWEET'S!

KINNEAR® ROLLING DOORS

Saving Ways in Doorways Since 1895

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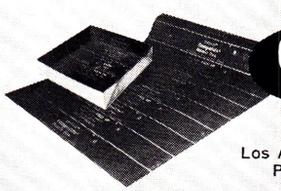
IT COSTS NO MORE WITH COMPOTITE

Compotite waterproofing can result in a fully tiled shower area at no more than the cost of a tub or open-base receptor. For Compotite is less in price than any other shower pan material. Beautify your baths, upstairs laundry rooms, and other wet-areas with everlasting ceramic tile based on Compotite. Give her the tile she loves!



Compotite
Shower Pan

P.O. Box 26188
Los Angeles, California 90026
Phone: (213) 483-4444

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Architectural color...
as durable as its namesake.

GIBRALTAR by the Sea

The Gibraltar Bronze selected for the exterior panels of Gibraltar Towers in Fort Lauderdale, Florida is only one of 110 standard architectural colors offered by AllianceWall. No other finish provides the long-lasting beauty of AllianceWall porcelain-on-steel. These self-cleaning panels never require painting or other expensive maintenance. They are impervious to sea, sun, salt and smog. The colors never fade. . . stay bright and new-looking year after year.

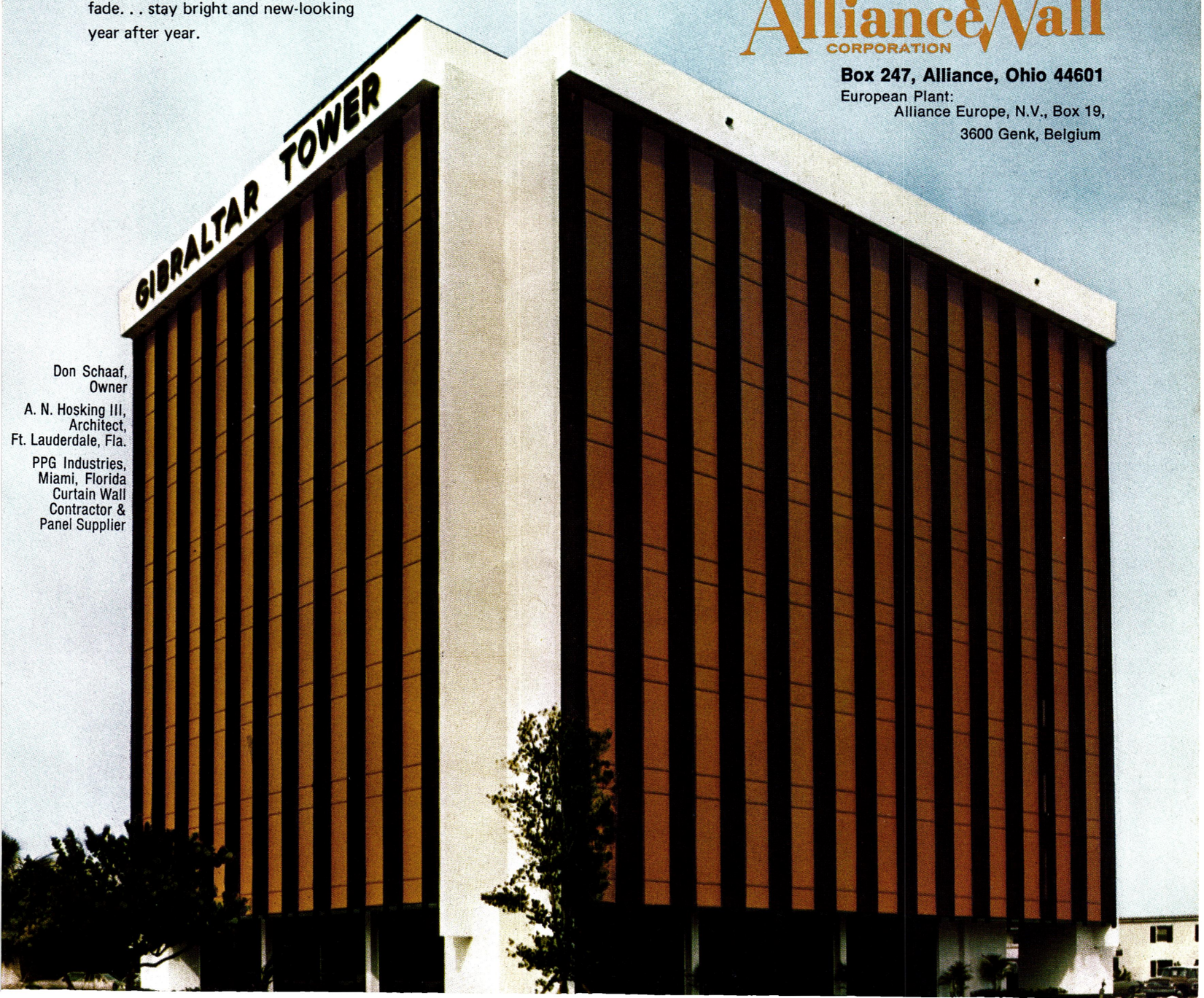
AllianceWall porcelain-on-steel panels are both graffiti-and vandal-proof. They cannot be scratched or marred. Get the facts on AllianceWall porcelain-on-steel panels for your next project. . . An ideal finish for both exterior and interior walls.

For additional information, write

AllianceWall® CORPORATION

Box 247, Alliance, Ohio 44601

European Plant:
Alliance Europe, N.V., Box 19,
3600 Genk, Belgium

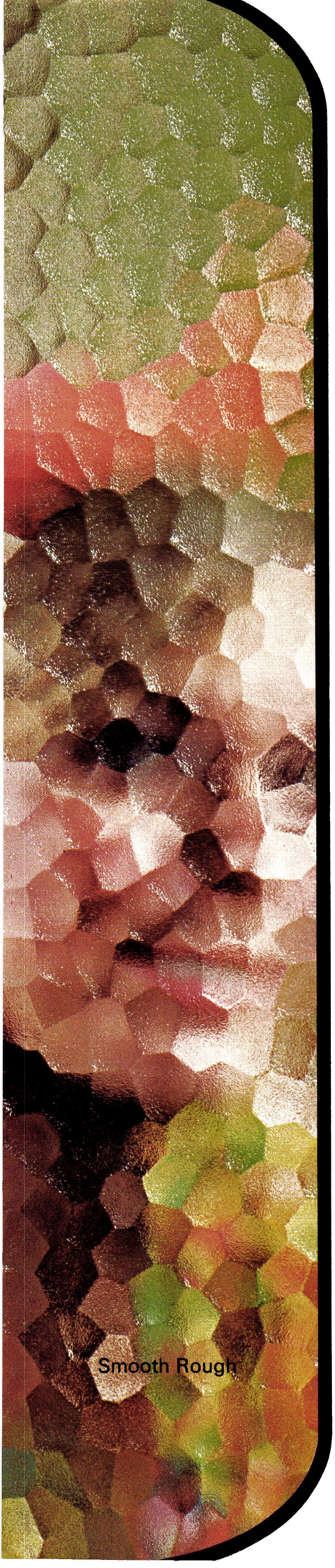


Don Schaaf, Owner

A. N. Hosking III, Architect, Ft. Lauderdale, Fla.

PPG Industries, Miami, Florida Curtain Wall Contractor & Panel Supplier

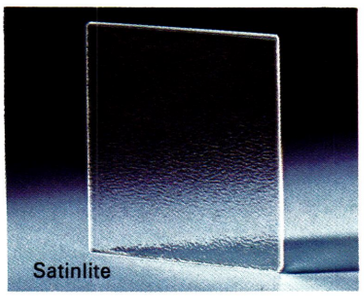
Hylite
Syenite
Pluralite

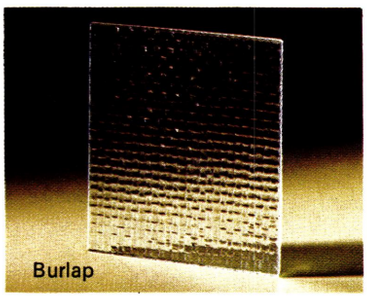


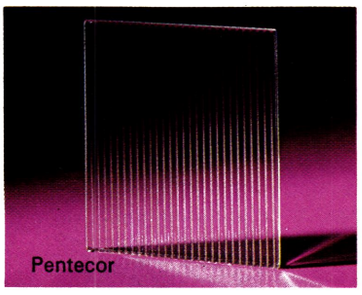
Selections that give imagination full sway

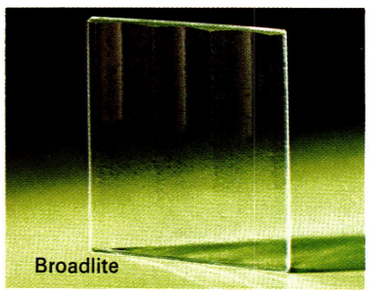
MISSISSIPPI PATTERNED GLASS

Let light work for you through patterns that give every object exciting new angles of interest. Panels and partitions reveal the passing view. But textures blend with lights and colors to soften the image and give design emphasis. Mississippi patterns by CE GLASS give refreshingly new concepts to windows and walls. Obscure patterns are available to give privacy to any desired degree. CE GLASS has the wide range selections so there's never a limit. Imagination can have full sway whether for contemporary or traditional, or for strictly functional or highly decorative purpose.









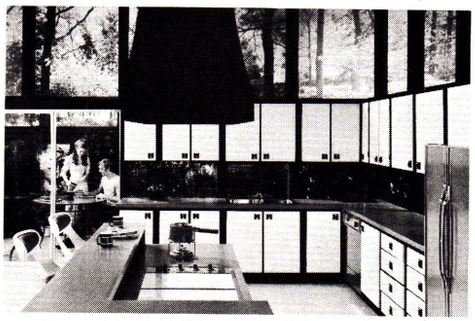
Mississippi patterned glass by CE GLASS is available from leading distributors of quality glass in the principal cities of the United States and in Canada from Canadian Pittsburgh Industries, Ltd., Glass Division. For further information or samples, contact our office nearest you or write CE GLASS, 825 Hylton Road, Pennsauken, N. J. 08110 or call 609-662-0400.

See our catalog in Sweet's (S)

CE GLASS

For more data, circle 106 on inquiry card

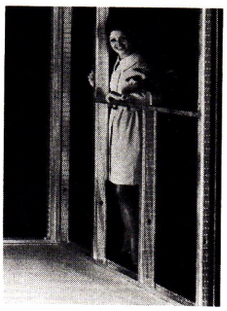
continued from page 182



BLACK AND WHITE CABINET / The *Overture* line is contemporary and economical according to the producer. Modular units for both kitchen and bath can be easily installed in apartments, townhouses and homes. ■ Del-Mar, Atlanta, Ga.

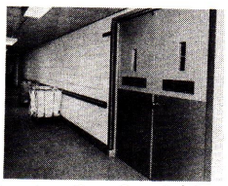
Circle 312 on inquiry card

STEEL THERMAL STUD / Designed for framing residential, institutional and light commercial structures. This steel stud's ability to resist heat flow allows inside and outside wall surfaces to stay free of "ghost-marking." Product offers fire safety, high strength-to-weight ratio, and meets FHA and HUD requirements for impact and wind loads for load-bearing members. Available in any lengths and widths of 3 in. and 3½ in. ■ United States Steel Corp., Pittsburgh, Pa.



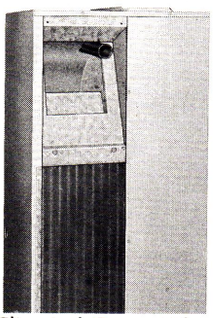
Circle 313 on inquiry card

WALL AND DOOR GUARDS / Made of vinyl, these guards are mounted on a continuous aluminum retainer and snap into position. Corner, wall and door protectors are available in six colors with a matte pebble-grain surface ■ Construction Specialties, Inc., Crawford, N.J.



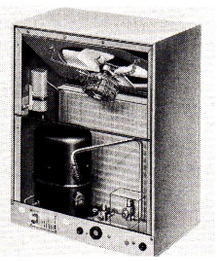
Circle 314 on inquiry card

APARTMENT AIR CONDITIONING / Designed for apartments, single-family and industrialized modular homes, this unit is a gas heating/electrical cooling thru-the-wall single package model, with ducted air capabilities. Shipped completely assembled, wired. Height: 56 in. Width: 27 in. Depth: 24 in. ■ Mueller Climatrol Corp., Milwaukee, Wis.



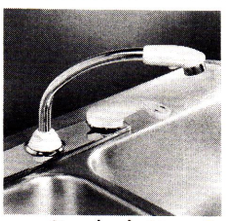
Circle 315 on inquiry card

CONDENSING UNIT / Especially for apartment applications, the HSW4 series comes in 1-, 1½- and 2-ton sizes and is built for through-the-wall or free-standing installation at grade level. Cooling capacities range from 17,000 through 28,000 BTU/hr. The unit is made of galvanized steel, weather-protected. ■ Lennox Industries Inc., Marshalltown, Ia.



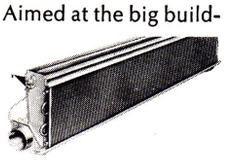
Circle 316 on inquiry card

SINK FITTING / The aerator spout turns 360 degrees at the base of this model and the head can be tilted 45 degrees from right to left. It is a low-cost, dual-handle unit, encased in bone-colored, fiberglass reinforced *Celon* ■ American Standard, New Brunswick, N.J.



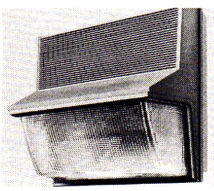
Circle 317 on inquiry card

INDUCTION TERMINAL / Aimed at the big building, this line of induction equipment is available for wall or floor mounting in both standard and low vertical configurations. High-pressure duct transitions are eliminated. ■ The Trane Co., La Crosse, Wis.



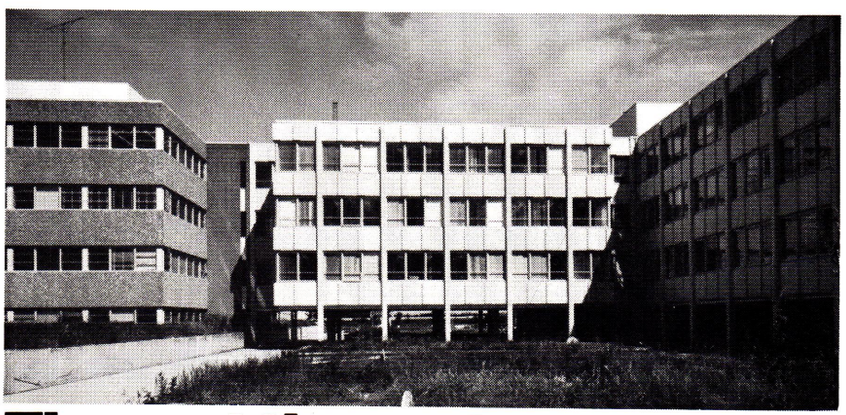
Circle 318 on inquiry card

SECURITY LIGHTING / Combines a cast aluminum housing with a prismatic glass refractor that projects 8 9/16 in. from the mounting surface. Available in 100w through 250w mercury vapor and up to 300w incandescent. ■ ITT Landmark Lighting, Southaven, Miss.

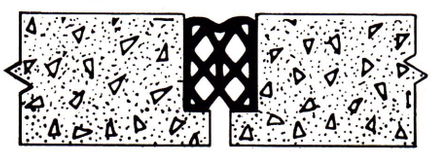


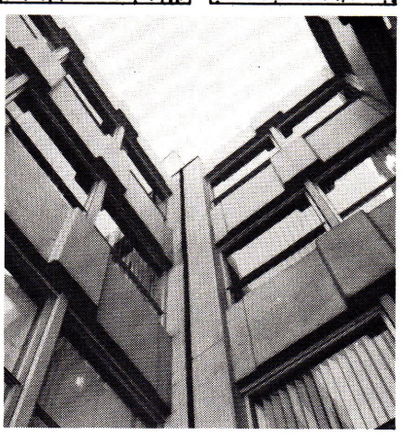
Circle 319 on inquiry card

more products on page 192



They cut the cost of joint maintenance at B.C.I.T.*





Long term economy was a prerequisite in the new building at Vancouver's British Columbia Institute of Technology. ACMASEAL® expansion joints are designed to do just that.

The preformed Neoprene compression seal will virtually eliminate routine joint maintenance and repair costs. Throughout expansion and contraction, ACMASEAL exerts constant pressure against joint sides to maintain a permanent seal against water, corrosives, dirt and grime. By resisting weather, sun, salt, oil and abrasion, ACMASEAL gives years of maintenance-free protection. Easy-to-install ACMASEALS are designed to accommodate joint movements from 3/32" to 3". For built-in economy and protection of any practical structural expansion, specify ACMASEAL. Write for Data File BC-1 or see our insert in SWEET'S ARCHITECTURAL CATALOG FILE 7.11/Acm.

*British Columbia Institute of Technology.

Products illustrated are covered by U. S. and Canadian patents.

acme

HIGHWAY PRODUCTS CORPORATION

33 CHANDLER ST., BUFFALO, N.Y. 14207 ■ (716) 876-0123

For more data, circle 107 on inquiry card

fly me to the moon...

but while waiting, seat me in one of those heavenly, comfortable AFKA Chairs

Even the "Astronauts" never had it so good from a deep cushion comfort standpoint . . . and from a concourse standpoint no other seating is quite so functional in planning concept, so durable, so maintenance-free and so economical an investment. ■ Such features as heavy-duty wrap-around fiberglass shells protect seat and backrest cushions from tear and other damage . . . in fact, the shells are so durable that when time takes its final toll on the cushions, all you do is insert new cushions quite simply and easily, and wind up with practically new seating! No need to re-purchase the complete unit at all! ■ As for bases, you have a choice of three, smartly designed heavy-duty types including floor mounted bases, all of which test-out to withstanding as much abuse as most anyone can dream up. ■ Colors? AFKA offers four standard fiberglass shell colors, plus contract color options. Cushion coverings in fabrics and a wide array of vinyls or C.O.M. We've just the brochure on AFKA modular and office seating you'll want to write "Specs" from. *Write for it today, on your letterhead, please.*

krueger
GREEN BAY, WISCONSIN 54306

Showrooms: *NEW YORK: 20 E. 46th Street • CHICAGO: 1184 Merchandise Mart • LOS ANGELES: 8899 Beverly Boulevard Boston • Indianapolis • Dallas • Houston • Denver*

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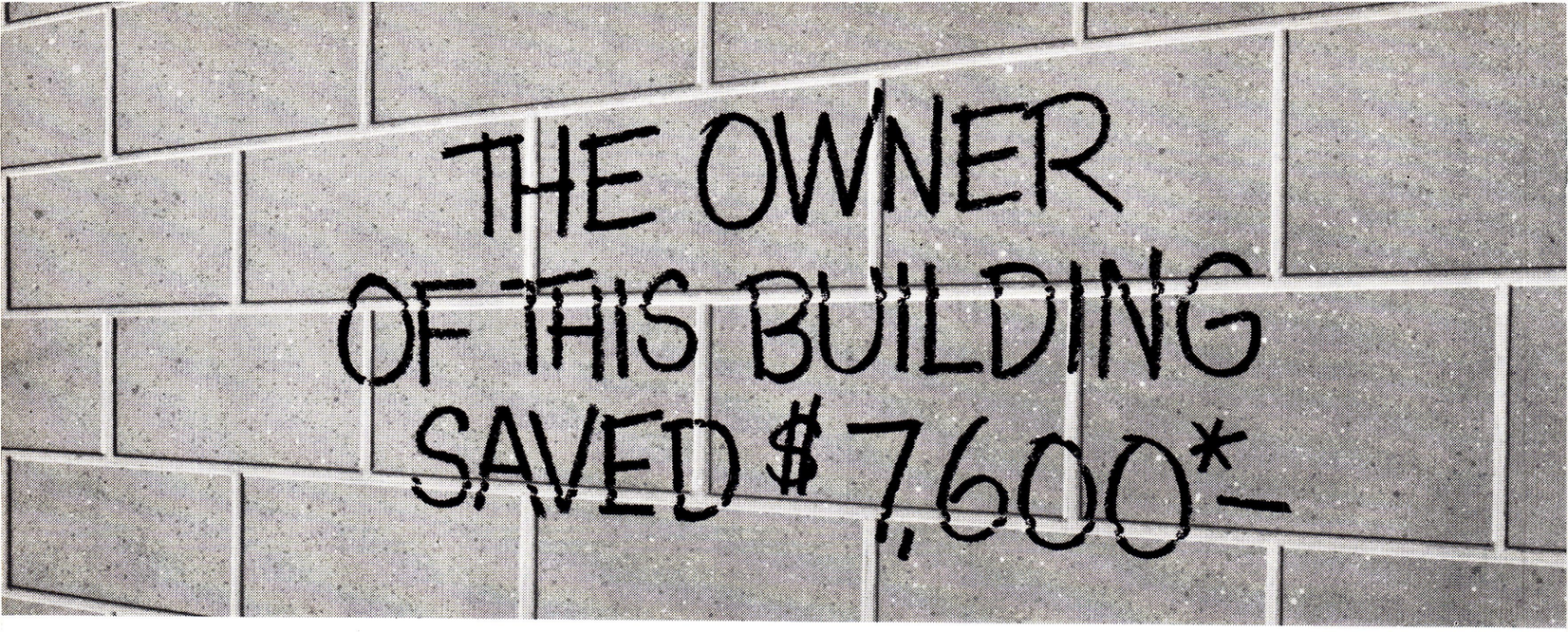


...all because someone specified ZONOLITE Masonry Fill Insulation.

No wonder he's sold on the people who advised him to insulate.

It makes sense. Masonry walls need insulation even more than wood frame walls.

ZONOLITE® Masonry Fill is a water-repellent, granular vermiculite that improves the thermal performance of masonry walls up to 50% or more. It provides increased comfort through warmer walls and uniform temperature.

Year-'round savings quickly pay for this low-cost insulation. Typical average returns on the cost of insulating with ZONOLITE Masonry Fill range from *21% to 48%* over a ten-year period.

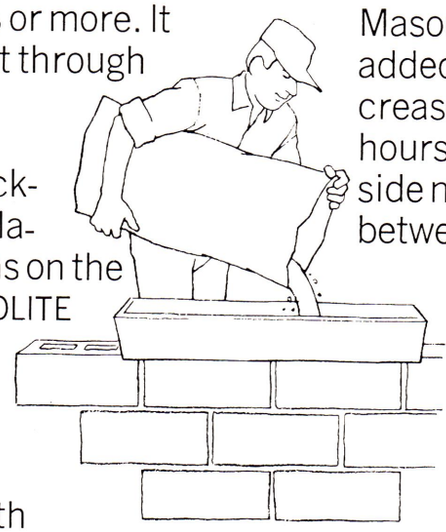
Some examples:

A Boston office building with 10,000 sq. ft. of wall area. Insulation installed: $1,700. Estimated ten-year savings: $6,350 for heating, $1,250 in electricity for cooling. A 45% average annual return on insulation cost.

The same building in Atlanta: $3,500 savings, a 21% return. In Minneapolis: $8,150, a 48% return!

Reductions like these in fuel consumption can ease the nation's energy crisis, and reduce pollution caused by excessive fuel use.

In addition to saving money, ZONOLITE Masonry Fill Insulation provides added fire protection—actually increases fire resistance up to 6 hours, while helping to deaden outside noises and noise transmission between rooms.



It makes sense to recommend and specify ZONOLITE Masonry Fill. For more information, send the reader service card. Or, write today for brochure MF-164. It contains specific cost data proving the savings ZONOLITE Masonry Fill Insulation offers your clients.

W. R. Grace & Co., Construction Products Division, 62 Whittemore Ave., Cambridge, Mass. 02140.

GRACE ZONOLITE

For more data, circle 109 on inquiry card

Providing believable solutions to lighting problems...

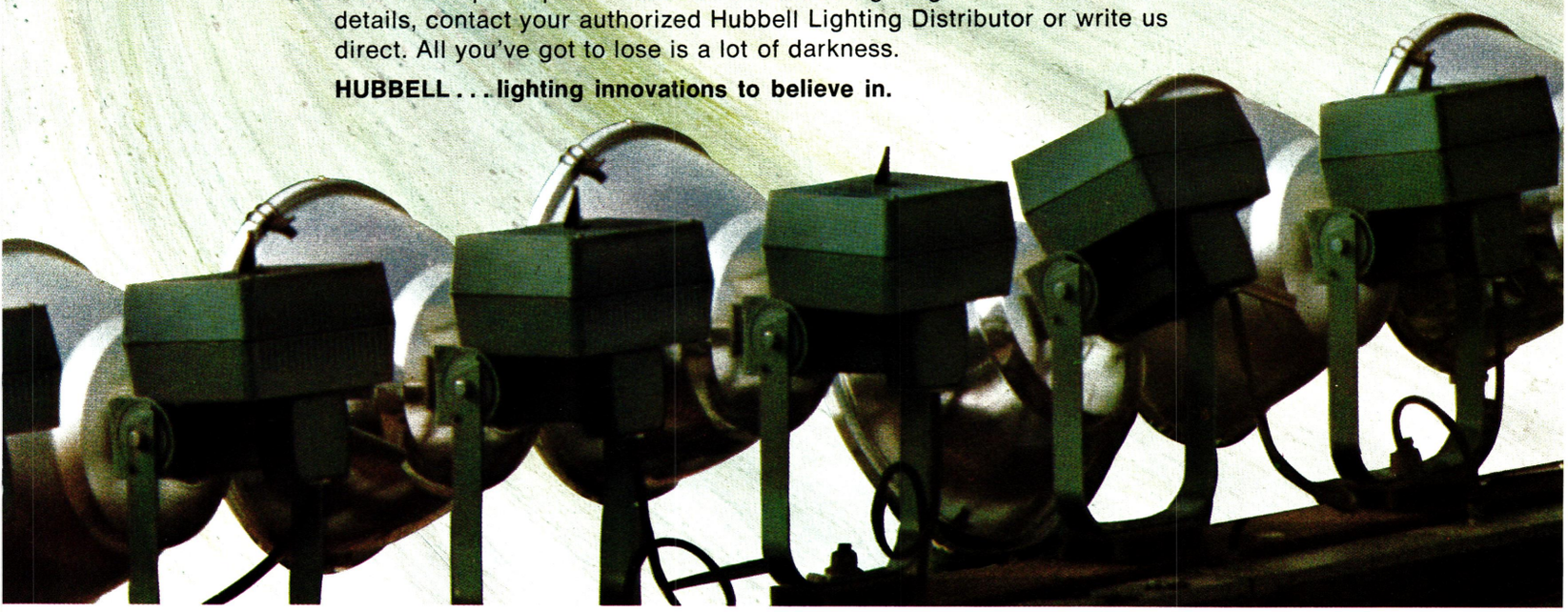
a Hubbell specialty!

Involvement in every phase of a lighting system is what you get from the Hubbell Lighting Division. Typical of this involvement is the modern lighting installation at Chicago's Sportsman's Park race track.

This unique, new lighting system features the Hubbell Series 6000 floodlights, which make Sportsman's Park the nation's best lighted track using the metal halide light source.

During the entire planning, installation, aiming and testing, a Hubbell Lighting Specialist assisted engineering and contracting personnel to assure fool-proof performance and the best lighting results. For more details, contact your authorized Hubbell Lighting Distributor or write us direct. All you've got to lose is a lot of darkness.

HUBBELL . . . lighting innovations to believe in.



HUBBELL **lighting division**

TM

Lighting Division HARVEY HUBBELL INCORPORATED 2700 West Roosevelt Road, Broadview, Illinois 60153

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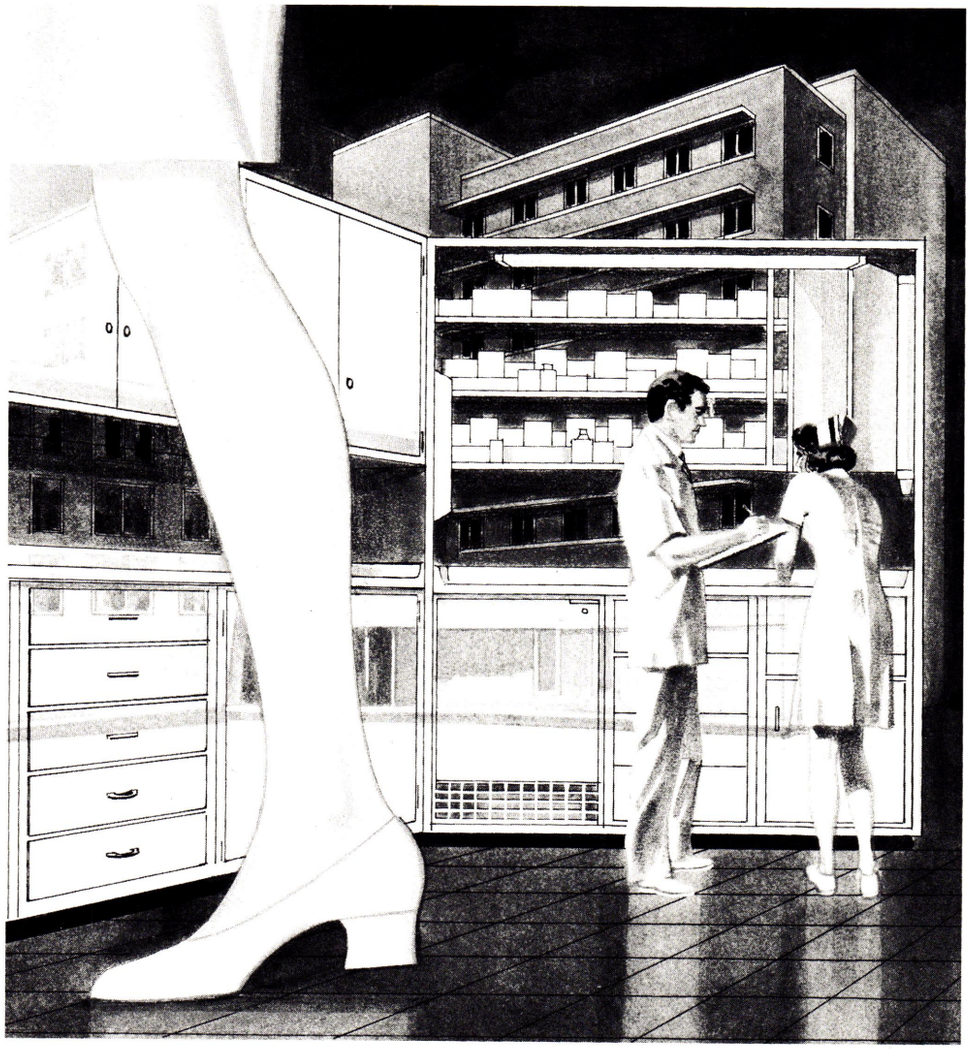


LUTHERAN HOSPITAL, FORT WAYNE, INDIANA

THE ARCHITECT* OF LUTHERAN HOSPITAL, IS IN STEP WITH THE TIMES

He knows that Watson Specialty Units save time, steps, and floor space in every ward.

Designed for maximum procedural efficiency, Watson Specialty Units have been uniquely engineered so that a number of tasks can be performed at a single unit. The Medicine Service Center in the above illustration is a compact, self-contained unit developed for preparation and dispensing of medicines at the floor nursing stations. Its features include a narcotic and hypnotic storage locker, a refrigerator, a 24 hour medicine card file, a sink with mixing faucet, a syringe drawer, a towel dispenser, cup dispenser etc.

The architect of Lutheran Hospital knows that speed and efficiency are of the essence where the health and well being of a town's populace is concerned. He knows that hospital floor space is a very valuable commodity. He knows that quality cannot be left to chance. He specified Watson.

HOSPITAL DIVISION **WATSON** Manufacturing Company, Inc. Jamestown, New York 14701

*MOX POHLMEYER & ASSOCIATES, FORT WAYNE, INDIANA

For more data, circle 111 on inquiry card

continued from page 188

POLE LIGHTING / The 4000w and 1600w models take four lamps, metal halide, mercury vapor or high pressure sodium. Each lamp is pre-wired with a quick disconnect plug to its own ballast assembly mounted on an individual swing-open, removable door for servicing. ■ ITT Landmark Lighting, Southaven, Miss.

Circle 320 on inquiry card

STEEL JOIST SYSTEM / Developed for the residential market, these joists are delivered to the site cut to exact lengths required. Galvanized, the product is lighter and stronger than wood, according to the producer. Available in 2 in. by 8 in. and 2 in. by 10 in. nominal sizes. Joists with 7½-in. and 9½-in. depths are available to match old lumber standards. ■ United States Steel Corp., Pittsburgh, Pa.

Circle 321 on inquiry card

TEXTURED PLYWOOD SIDING / Deep textured, natural wood that has been rough-sawn and impregnated with a material that eliminates fuzzy grain rise. Suitable for painting or solid-color staining. The product meets FHA requirements for racking strength, yet weighs less than comparable composition sidings, according to the producer. Low cost, low maintenance are claimed. ■ Simpson Timber Co., Seattle, Wash.

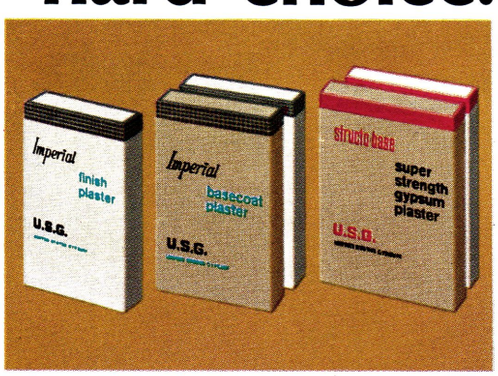
Circle 322 on inquiry card

GAS FIREPLACE / The unit can be set directly on a wood floor and against studding and other combustible material. The flat black surround is a self-trim feature. Screen extension is available up to 60 in. ■ Heatilator Fireplace, Div. of Vega Industries, Inc., Mt. Pleasant, Ia.

Circle 323 on inquiry card

more products on page 197

All 3 walls are alike. All 3 are different. You have a "hard" choice.



USG® Hard Wall Systems are all built to take abuse. Each finish tests at 3,000 psi compressive strength. All have withstood abrader tests far beyond normal requirements. And all provide high fire and sound transmission ratings, too. Yet, each is different to fulfill the different needs of your building's functions.

For living areas, IMPERIAL* One-Coat Veneer provides the low-cost lasting beauty of plaster walls. In commercial structures, where the ultimate in appearance is desired, owners can profit from Two-Coat Veneer. And in the high-traffic areas of institutions, the practical answer is STRUCTO-BASE* Base Coat, STRUCTO-GAUGE* Plaster and lime finish.

Building functions, continuing cost, use and maintenance are just some of the variables to consider when choosing your partition systems. We try to make this "hard" choice easy by offering you three systems. For details, see your U.S.G. representative, or write to: 101 S. Wacker Drive, Chicago, Illinois 60606, Dept. AR-92.

*Reg. U.S. Pat. Off.

UNITED STATES GYPSUM
BUILDING AMERICA

For more data, circle 114 on inquiry card

Loktuft® survives on three meals a day.

Three times a day, seven days a week, 2,500 students of Bob Jones University, Greenville, South Carolina, torture a carpet backed with Loktuft® Duon secondary backing.

The carpet is a 42 oz. level loop by Wunda Weve Carpets, Division of Dan River Inc. The 85′ x 300′ tackless installation, over dense rubber padding, is the largest carpeted university dining room in America.

Loktuft Duon secondary backing was used because it lays flat without bubbling or rippling. It also saves time and labor since it does not require extensive power stretching to achieve a good, flat installation. Loktuft cuts cleanly without fraying. And seams join almost invisibly.

Now they've discovered how well it performs.

After two years, Jim McAbee of Certified Carpet Service, Greenville, reports not a single call-back on the installation. No stretching. No delamination problems.

Loktuft Duon secondary backing withstands the rigors of intense traffic, movement of thousands of chairs and repeated cleanings.

Even massive water spills common to large dining hall facilities create no puckering problems and that's because Loktuft is made with Marvess® olefin, a Phillips 66 fiber which resists damage from rot, mildew and insects.

Loktuft Duon. If it can handle three meals a day at Bob Jones University, it can handle anything you might serve up.

Loktuft®
A PHILLIPS 66 CARPET BACKING

PHILLIPS FIBERS CORPORATION GREENVILLE, SOUTH CAROLINA, A SUBSIDIARY OF PHILLIPS PETROLEUM COMPANY. MARKETING OFFICES: P.O. BOX 66, GREENVILLE, S.C. 29602, (803)242-6600, 1120 AVENUE OF THE AMERICAS, N.Y., N.Y., (212)697-5050.

*REG. TRADEMARK, PHILLIPS PETROLEUM COMPANY

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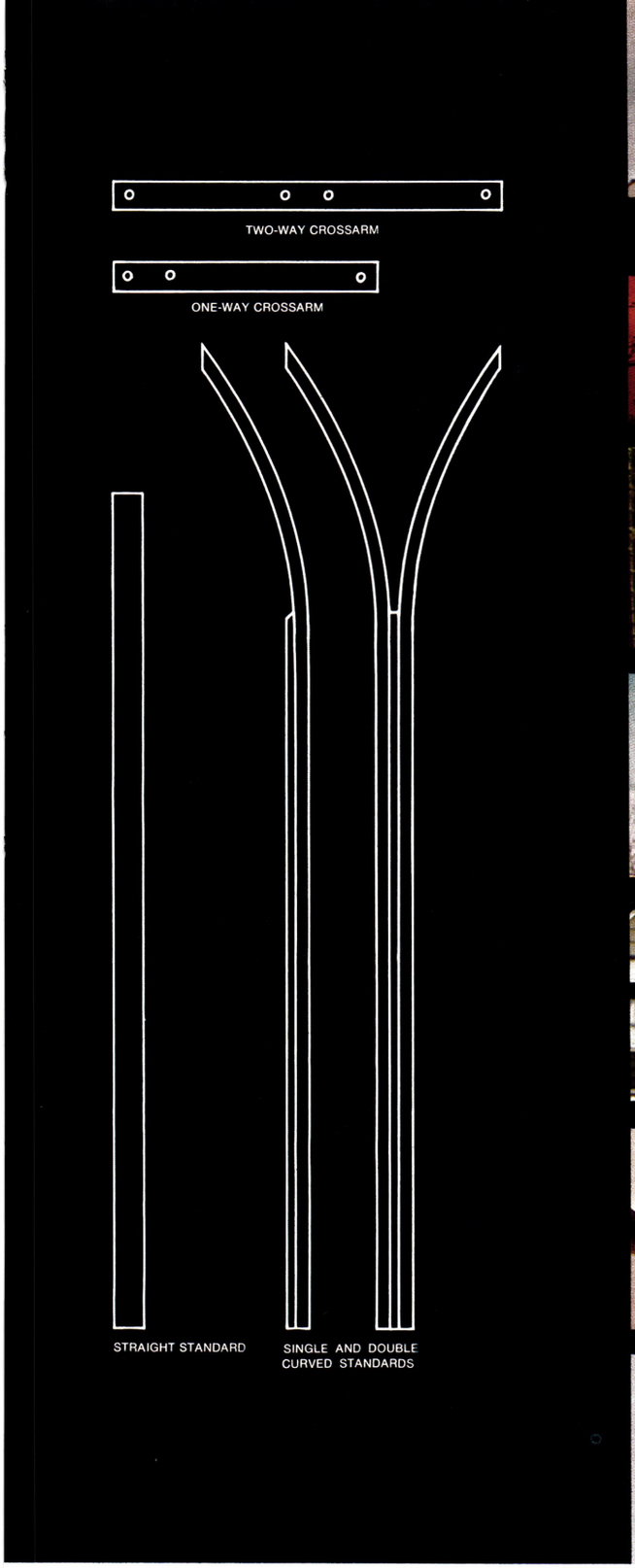


This simple system has expanded.

A new and much greater selection of luminaires is now available for use with Weyerhaeuser Lighting Standards.

Gardco, General Electric, Holophane, McGraw Edison and mcPhilben—all have combined their exciting selection of fixtures with Weyerhaeuser Laminated Standards.

New advantage. You can now choose from more than a thousand design possibilities.

Old advantage. This is an environmental lighting system. It blends with the environment as naturally as a tree.

The wood part of the system consists of laminated wood standards in three shapes: straight, single or double curved. Plus one- and two-way crossarms.

Weyerhaeuser Lighting Standards are treated for long life with penta in light solvent. You can stain the standards or leave them natural. And local inventories are available in many markets.

For the full story on Weyerhaeuser Lighting Standards for residential areas, commercial areas, parks, urban renewal projects—write Weyerhaeuser, Box B-9439, Tacoma, WA 98401.

Weyerhaeuser

New high-performance 875 Whiteprinter.

It pays where it counts: in more prints turned out every day or in fewer operator hours.

This new Bruning 875 Whiteprinter's top rate is a speedy 80 feet per minute, but that's only half the story. Because the 875 is loaded with exclusive features that save time and trouble. And give you greater productivity.

First, the 875 cuts operator time because it has a soft-feed roller to protect tracings from tearing, wrinkling—and the resulting delay. Next, only the 875 has a slow forward speed for extra accuracy in lining-up sheets. More efficiency. More productivity.

And for still faster action, all controls are in a handy cluster that slides out for easy access. Push-buttons control all operations. Coded lights constantly confirm desired operating mode.

Like all Bruning products, the 875 is built to last and is backed by the famous Bruning tradition of continuous service to the engineering profession, plus a constant supply of up-to-date products.

Want to learn more about this remarkable Whiteprinter that can literally pay for itself? Call your local Bruning man for a demonstration. Or write Bruning, 1834 Walden Office Square, Schaumburg, Ill. 60172.

Your single best source in engineering graphics.

It pays for itself in more prints per day.

BRUNING

DIVISION OF ADDRESSOGRAPH MULTIGRAPH CORPORATION

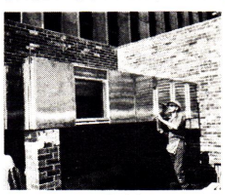
For more data, circle 115 on inquiry card

continued from page 192

FLOOR AND ROOF SYSTEM / Designed for low-rise apartments and single-family homes, *I/D* includes cast-in-place concrete, steel truss tees and leave-in-place fiberboard forms. System can span 24 ft. The forms rest on the steel truss tees which reinforce the concrete floor. Cavity spaces carry the mechanical systems. Floor-to-ceiling depth of the concrete system is 12 in. ■ Portland Cement Assoc., Skokie, Ill.

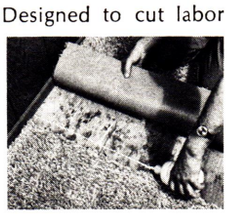
Circle 324 on inquiry card

SHEET COPPER / This system of laminated panel construction comprises structural and veneer panels, transverse seams, fascia, soffit and other roof details. Veneer panels are available with ⅜-in. and ¾-in. substrates, weighing respectively 1¾ lbs and 3 lbs per sq ft. Structural panels have 3-in. honeycomb cores and weigh 2⅓ lbs per sq ft. Installation requires no special skills or tools, according to the producer. ■ Revere Copper and Brass Inc., New York City.



Circle 325 on inquiry card

APARTMENT CARPET / Designed to cut labor costs by nearly one-half, this carpeting includes a nylon shag in seven colors, with foam backing. Carpet seams are precut. Available in 12-ft widths, *Apartment One* can be laid without creeping. ■ Armstrong Cork Co., Lancaster, Pa.



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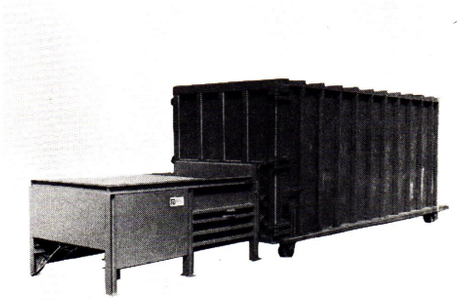

STATIONARY PACKER / The line ranges from ½ cu yd- to 5 cu yd-units and units are recommended for apartment houses or municipalities. The apartment model will handle the output of as many as 600 apartments. The unit is used with both front and rear loader containers. ■ International Dynetics Corp., South Norwalk, Conn.

Circle 327 on inquiry card

more products on page 202

For more data, circle 116 on inquiry card ➧

NEW RC-12-A
High-capacity cooler for heavy traffic areas

- Chills 12 gallons of water per hour for high-demand conditions.
- Fully-recessed design does not intrude into corridor space.
- Deep basin prevents splashing.
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Ask about our complete line of fully-recessed and semi-recessed water coolers and drinking fountains.
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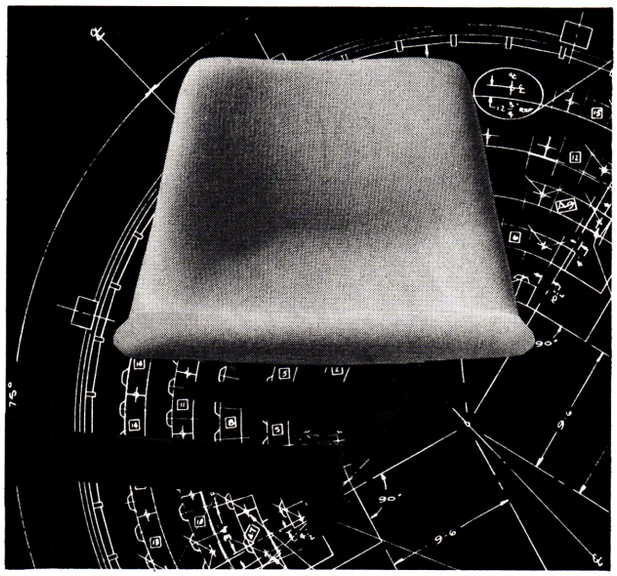

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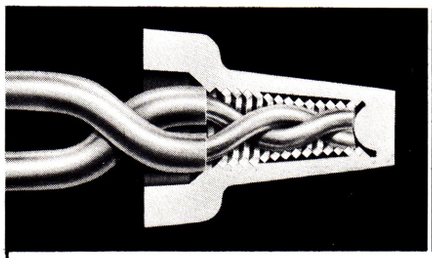

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Now Ideal's color-coded Wing-Nuts come in every size.

Ideal's new "gray-size" Wing-Nut completes the line. Lets you select the most economical size to fit **any** branch circuit wiring job. Send for FREE samples and the new Ideal Connector Guide . . . a complete reference file to the industry's largest line of solderless wire connectors.

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If you scratch our new PVF coating, what happens to the aluminum substrate?

Nothing.
A protective layer of aluminum oxide forms on the substrate surface. This natural protection resists corrosion and discourages flaking or adhesion loss.

Obviously, any organic coating will deteriorate in time. When it does, it becomes spongelike in texture. Retains considerable moisture. Wet cycles last longer. The hydrophilic cells trap such contaminants as sulfur dioxide. At this point, the corrosive effects of electrolytic action usually become apparent with most substrates. You get chemical attack at the interface; underfilm problems causing flaking or loss of adhesion; staining or streaking.

But if the substrate is aluminum, the effects of electrolytic action do not become apparent. An aluminum substrate *protects* rather than destroys an organic coating.

Specify our new PVF coating on the sidewalls of your next building. We call it Alcoa® Super Alumalure® finish. Available in 10 superb, trend-setting colors, Alcoa Super Alumalure finish offers the advantages of a super-tough fluorocarbon coating, at a price you can live with.

For details, write Aluminum Company of America, 1055-J Alcoa Building, Pittsburgh, Pa. 15219.

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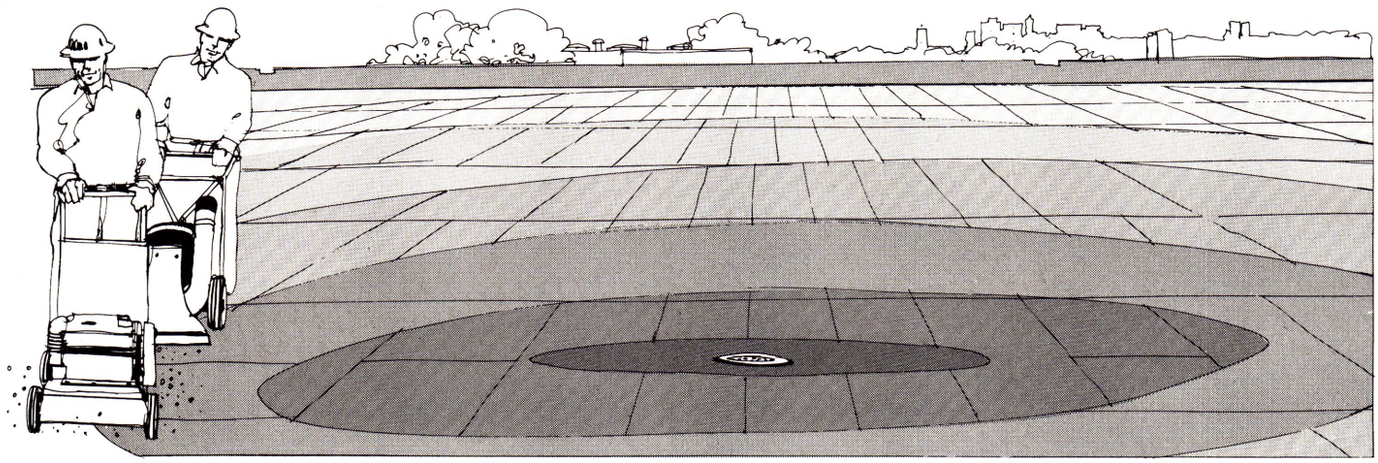
ALCOA



Now you can solve flat roof drainage problems quickly, at low cost, with superior insulation ...using the

J-M Fesco® Dri-Deck* system.

*Trademark of Johns-Manville Corporation.

Flat roofs often present serious drainage problems that cause roof damage. Heretofore, the only solution was to contour a suitable fill material on the structural deck to provide suitable slope and drainage. It was a good process, but costly. time-consuming and added a lot of extra weight.

Now, Johns-Manville announces a new system of contouring flat roof decks for positive drainage. It's easy to apply, quick, low cost, and much lower in weight than previous means. And, because it's based on J-M Fesco Board, the system also provides superior and desirable insulation.

Actually, the idea's so simple we wonder why we didn't think of it before. And, so practical, it can solve a lot of your built-up roofing application and repair problems, too.

Don't wait another minute to get details. Write for our new Fesco Dri-Deck brochure, to: Johns-Manville, Post Office Box 5108, Denver, Colorado 80217.

Johns-Manville JM

*For more data, circle **121** on inquiry card*

Spaulding's Creative Designer Group

An imaginative ensemble of light
that distinctively combines function and form.
Created to complement and enhance
the spirit of your design. ■ Choose
from Group Sculptura — changing dimensions;
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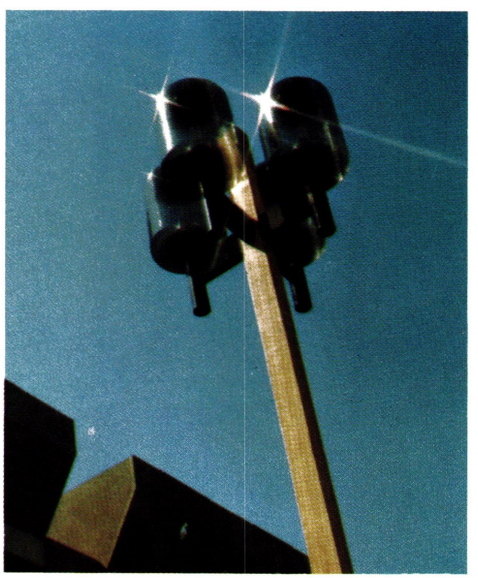

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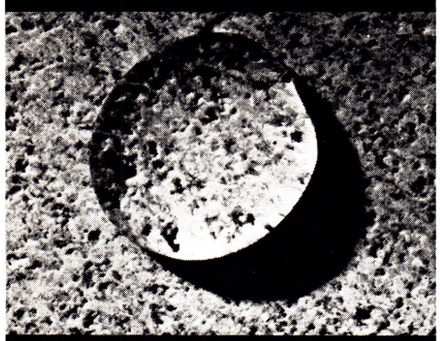
SURE-KLEAN®

Weather Seal WATERPROOFS



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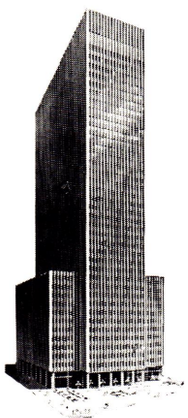

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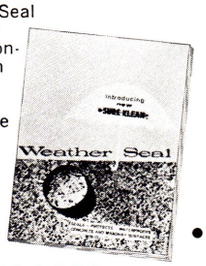
It's a fact. New Sure Klean Weather Seal not only out-weathers silicone and common acrylic coatings, but we guarantee, in writing, that it will waterproof masonry wall surfaces.

Most important, Weather Seal is so efficient it gives any building that clean, dry, non-streaking appearance rain or shine. Get in on a good thing. Write for free information and complete lab test data. The coupon below will bring it to you by return mail.



PSC Process Solvent Company
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Kansas City, Kansas
66104

Please send me the Weather Seal story.

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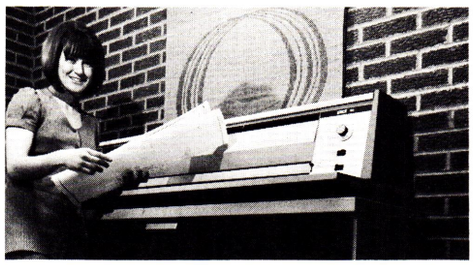
AR-92

For more data, circle 123 on inquiry card

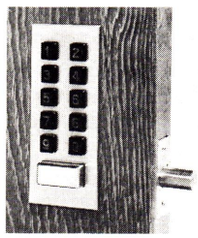
continued from page 197



ENGINEERING COPIER / Diazo printing without ammonia fumes or chemical mixes is featured on this model. It is dry, odorless and needs no venting, according to the manufacturer. Delivers an 18 in. by 24 in. print in 10 seconds. Also available on a rental basis. ■ Bruning Div., A-M Corp., Des Plaines, Ill.

Circle 328 on inquiry card

COMBINATION DOOR LOCK / A four-digit combination is needed to unlock a one-inch hardened steel deadbolt which cannot be sawed or jimmied, according to the manufacturer. Combinations—up to 10,000 possible—can be changed easily, with master combination systems available for apartment or commercial use. ■ Preso-Matic Lock Co., Inc., Lyons, Ill.



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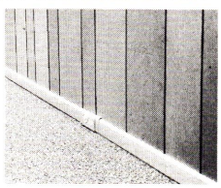
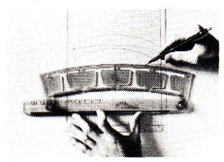
VINYL SURFACE RACEWAY / This electrical raceway is designed for convenient, economical installation which is accomplished mechanically or with adhesives, to a variety of surfaces ranging from cement block to wood. Cover strip, end caps and corner pieces snap over the base strip allowing for changes at a future time. The raceway will not support combustion and can be painted. UL-listed ■ Johnson Rubber Co., Middlefield, O.



Circle 330 on inquiry card

ADJUSTABLE CURVE DRAFTING TOOL / The *Acu-Arc* can form a curve with a radius between 6¾ in. and 200 in., permitting one draftsman to see the line work underneath. Twelve-inch ruling edge. The company claims the arc drawn will vary less than the width of the line made by the pencil. ■ Hoyle Engineering Co., Fillmore, Calif.



Circle 331 on inquiry card

DRAFTING FURNITURE / Electrically-powered, the drafting board floats a full 20 to 50 5/8 in. up and down at the touch of a toe. Reference desk may be placed in any relationship to the drafting table and is available in color. Brushed chrome outrigger legs combine with solid steel construction. ■ Hamilton Mfg., Two Rivers, Wis.

Circle 332 on inquiry card

more products on page 206

Advertisement

FOR THE RECORD

CHARLES A. LINDBERG comments on an excellent way to distribute and dispose of patient supplies.

There is a new unit you can have installed in the wall between the patient's room and the corridor of any hospital or nursing home you design, which will provide the most sanitary and efficient distribution and disposal of patient supplies.

It is a double door, pass-through cabinet that permits routine restocking and disposal without disturbing patients. Nurses have immediate access to clean supplies and medicines within patients' rooms. Soiled items are placed in the disposal section of the cabinet for later removal by attendant from the corridor.

Called The Nurserver, this innovative product will assure the utmost convenience in patient care. It is made of 18 gauge enameled furniture steel and you may specify it with an optional leather textured plastic laminated door on the corridor side. Colors can be matched to your selections. Variations in construction and sizes are offered. A high pressure plastic laminated model is also available in various sizes and in a wide variety of wood grains and colors.

For further information, contact Jamestown Products Division of AVM Corporation, 178 Blackstone Avenue, Jamestown, New York 14701.

Charles A. Lindberg

Vice President — Institutional Sales
AVM of Maryland, Inc.

For more data, circle 124 on inquiry card

PLEXIGLAS®
TOUGH, GRACEFUL GLAZING

Domed galleria glazing Worcester Center, Worcester, Mass.
Architects: Welton Becket and Associates

Corrugated solar control glazing Southwestern Indian Polytechnic Institute, Albuquerque, N.M.
Architects: W. F. Krueger and Associates

Breakage-resistant, thermoformable, solar-controlling Plexiglas acrylic sheet will blend gracefully with your most demanding designs. Available in a broad selection of sizes and thicknesses, Plexiglas is light in weight and installs with a minimum of supporting members. The Solar Control Series of Plexiglas sheet gives you a choice of six bronze and six grey transparent tints permitting aesthetic flexibility with a range of light and solar heat control. Write for our latest brochure.

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Where building codes limit areas of plastic glazing, approvals of large area Plexiglas enclosures must be applied for on a special permit basis. Rohm and Haas Company can supply engineering and building code information on specific request.

ANSI—Z97 APPROVED

Plexiglas acrylic sheet meets the requirements for a safety glazing material as defined by the American National Standards Institute.

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LEADING ARCHITECTS CHOOSE WATSON

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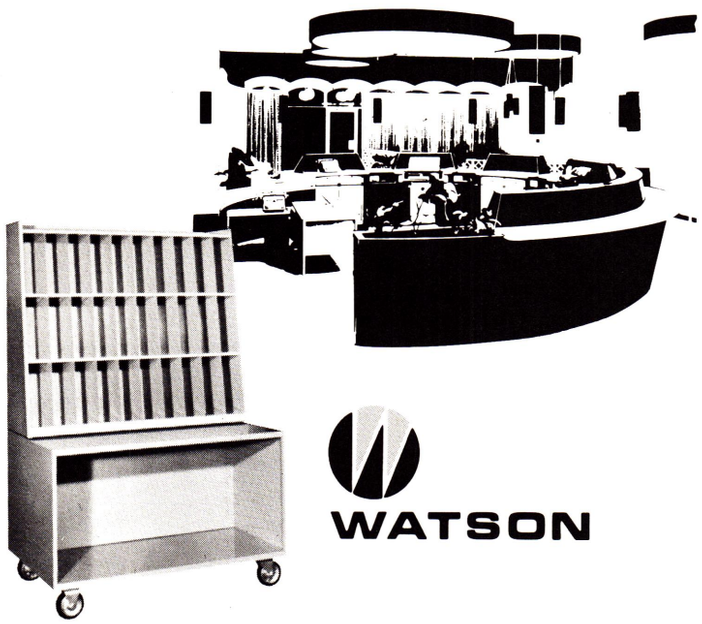

WATSON

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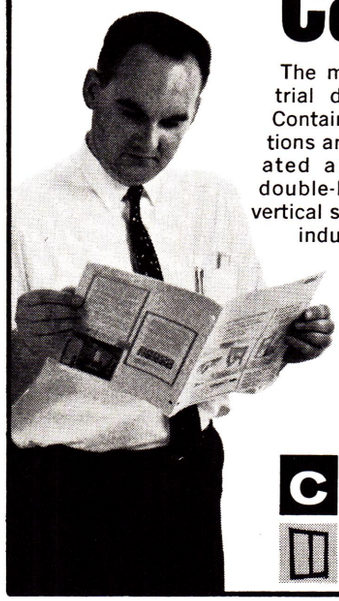
Free 16 page industrial door catalog!



The most comprehensive industrial door catalog ever issued! Contains descriptions, specifications and diagrams of power-operated and manual, single and double-horizontal sliding, bifold, vertical sliding and double-swinging industrial doors for the control of traffic, handling of material and the elimination of drafts and noise.

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CLARK DOOR

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- CONTINUOUS OPERATION
- AUTOMATIC DISPATCHING
- SERVES ALL FLOORS
- DELIVERS AND COLLECTS TRAYS
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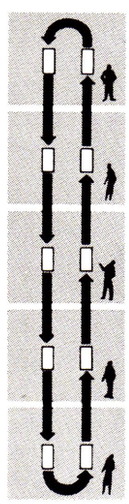

FREE BULLETIN describes Standard Conveyor *Recordlift*—ideal for multi-story buildings requiring inter-floor delivery of mail, documents, books, anything weighing up to 32 lbs. per load. Widely used in high-rise office buildings, insurance companies, banks, libraries, hospitals, etc. *Send today.*

Standard Conveyor COMPANY
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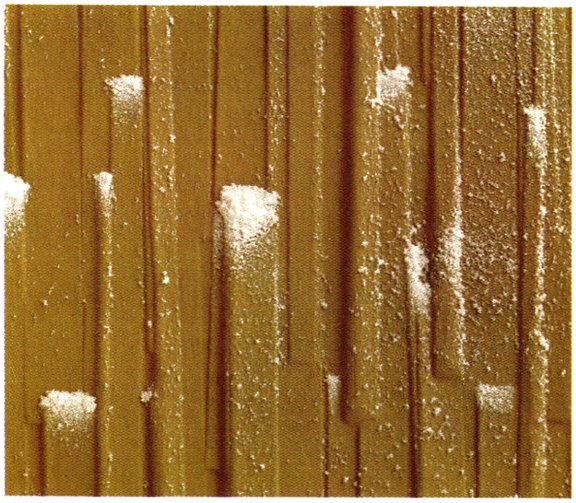
What's going on outside?

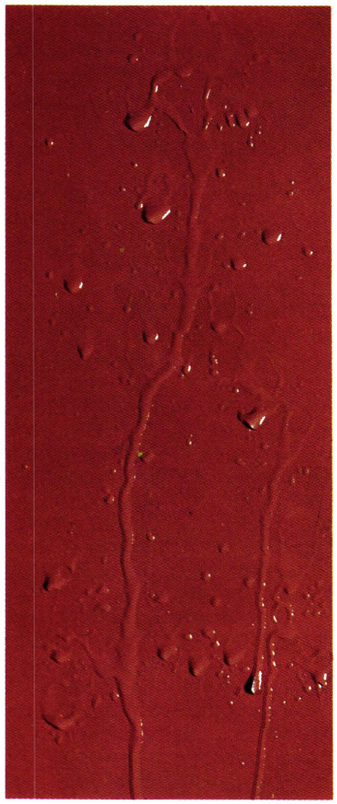


Sculpture

All kinds of exterior excitement from U.S. Plywood. For all kinds of exteriors.

Our Facad,® for instance, is pure sculpture. Lightweight, sturdy, easy to handle and install, Facad panels have a depth of relief you usually expect of heavy, precast units. But Facad weighs just two pounds per square foot. Facad is completely incombustible. And comes in a gallery of handsome standard surfaces. (You're looking at Composition 1 on the left.)

Color



Our Glasweld® is a panel of a different color. Twenty-six different colors, both smooth and slightly textured. (Like Guard Red shown here.) Inorganic colors that keep their integrity for years and years – in all kinds of weather. Waterproof, incombustible Glasweld can be cut, drilled and installed with ordinary power tools. Easily cleaned. Used anywhere there's a call for color.

Texture

Our Sanspray® is beautiful, durable, stone aggregate. Bonded to economical, easy-to-install plywood. It's far lighter and far less expensive than most stone and masonry claddings. It can be sawed, drilled, glued or nailed, and is virtually maintenance-free in all climates. Sanspray's remarkable texture comes in large (pictured here) or regular aggregates. And appropriately distinctive colors.

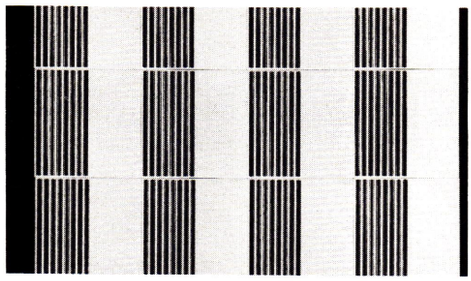
For further information on the outside excitement going on at U.S. Plywood, call your local U.S. Plywood Branch Office, or write directly to our New York office.

U.S. Plywood

777 Third Avenue, New York, N.Y. 10017

For more data, circle 129 on inquiry card

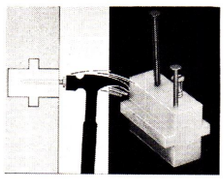
continued from page 202



GLAZED WALL TILE / A large variety of contemporary designs is available in Italian-produced tiles, 6 in. by 6 in. Shown is "Linee Caruso," black lines on white. Colors are available. ■ Country Floors Inc., New York City.

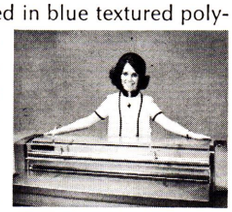
Circle 333 on inquiry card

NAIL BLOCK FOR CONCRETE / A high strength plastic, the *Berinsert* is designed to be inserted in precast or cast-in-place concrete, providing a surface that will receive nails or screws. Permits the direct simple mounting of hung ceilings, cabinets, doors, electrical fixtures to concrete. The company claims the placing of tolerances can be liberal. Will not shrink, chip or corrode. ■ The Rone Co., South Bound Brook, N.J.



Circle 334 on inquiry card

WHITEPRINTER / Finished in blue textured polyurethane enamel, this unit operates at speeds up to 17fpm, developing prints with ammonia-saturated air. A pump moves the air back into the ammonia source after the printing. Separate ammonia source is eliminated. ■ Welcor Inc., Detroit, Mich.



Circle 335 on inquiry card

DIGITAL DRAFTING SYSTEM / The *MetriGraphic* converts graphs, charts, maps, design drawings, civil engineering drawings or anything graphic to digital form. As the optical cursor is moved over the surface of a chart, digitizing is accomplished instantly. Routing pipelines or highways is a typical application. ■ H. Dell Foster Co., San Antonio, Tex.

Circle 336 on inquiry card

DRAFTING TABLE / Two in-line models, with detachable reference cabinets, are available with board sizes 37½ in. by 72 in. or 43½ in. by 72 in. ■ The Huey Co., Chicago, Ill.

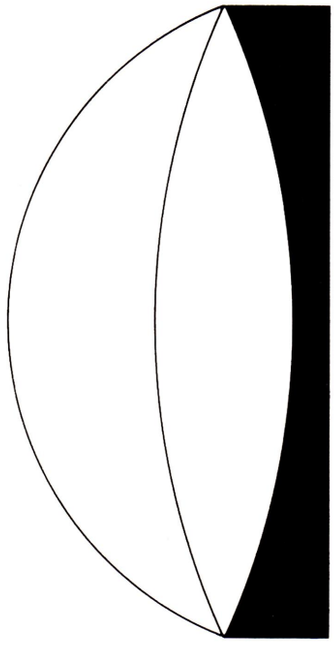
Circle 337 on inquiry card

LOW PROFILE AIR CONDITIONING / By combining the company's variable air volume system with one or more single-zone rooftop units, economical air conditioning of low profile buildings such as schools may be achieved, according to this manufacturer. Low first cost can be expected, while achieving many control zones, low operating costs and improved ceiling appearance. ■ The Trane Co., La Crosse, Wis.

Circle 338 on inquiry card

more products on page 214

THINKTHIN



Picture a wall only two inches thick, but capable of standing up to any kind of punishment. From a temper tantrum to an earthquake. Now imagine that the same wall could also be lightweight, economical, easily installed and maintained, and able to contain a fire for hours on end.

Impossible? Not at all. Metal lath and plaster two-inch solid partitions meet all these criteria—and then some. They're easy to estimate. Go up fast. Weight only about 18 lbs./sq. ft. (Under 9 lbs. with lightweight aggregate) And they've been subjected to temperatures reaching 2000° F for over five hours with no signs of collapse.

By saving several inches in thickness along every lineal foot, these walls can increase usable space in a building by as much as 7 percent.

Metal lath's mechanical keying action and uniform reinforcement make them practically impervious to impact forces. Or, to paraphrase an old saying, neither hurricanes, nor floods, nor angry tenants have been able to inflict serious damage.

New lathing techniques—including partial prefabrication—have made the installation simpler and more economical than ever.

Of course, thinthinking isn't limited to two-inch solids. You can choose from a wide range of space-saving metal lath wall systems. Everything from simple partitions to curtainwalls. All offering the kind of design versatility only metal lath makes possible.

Write us for more information on creative economics with metal lath. Our **Technical Bulletins Nos. 5, 17, and 136** supply detailed information on material selection and installation of assemblies for both exterior and interior uses.

Metal Lath Association
221 North LaSalle Street
Chicago, Illinois 60601

For more data, circle 131 on inquiry card

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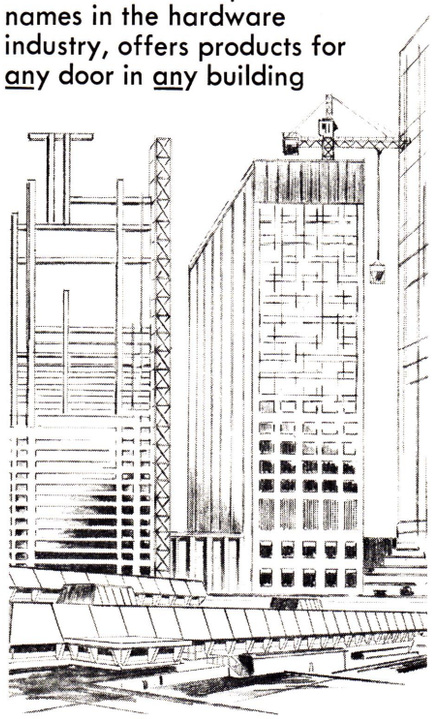
Glynn-Johnson, one of the most trusted and specified names in the hardware industry, offers products for any door in any building



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Bright ideas

Still specifying your washroom accessories from scattered sources? Then you probably haven't heard about Bradley's new systems approach for specifying quality washroom accessories. Bradley has just about everything for the washroom. Everything from washfixtures and showers to design-coordinated, recessed accessories. The expertly crafted accessories reflect the clean, functional lines of today's contemporary structures. And allow you complete design freedom. They also conserve space and reduce maintenance. Towel dispensers, waste receptacles, mirrors and shelves, and grab bars are only a few of the many accessories Bradley offers. Others include soap dispensers, napkin vendors and disposals, toilet tissue holders, seat cover dispensers, and related equipment. It's the complete line for institutional, commercial, industrial, and public buildings. From Bradley. The washroom systems specialists. Bradley Corporation, Washroom Accessories Division, Dept. A, P.O. Box 321, Moorestown, New Jersey 08057.

from Bradley!

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Leader in Washroom Fixtures and Accessories

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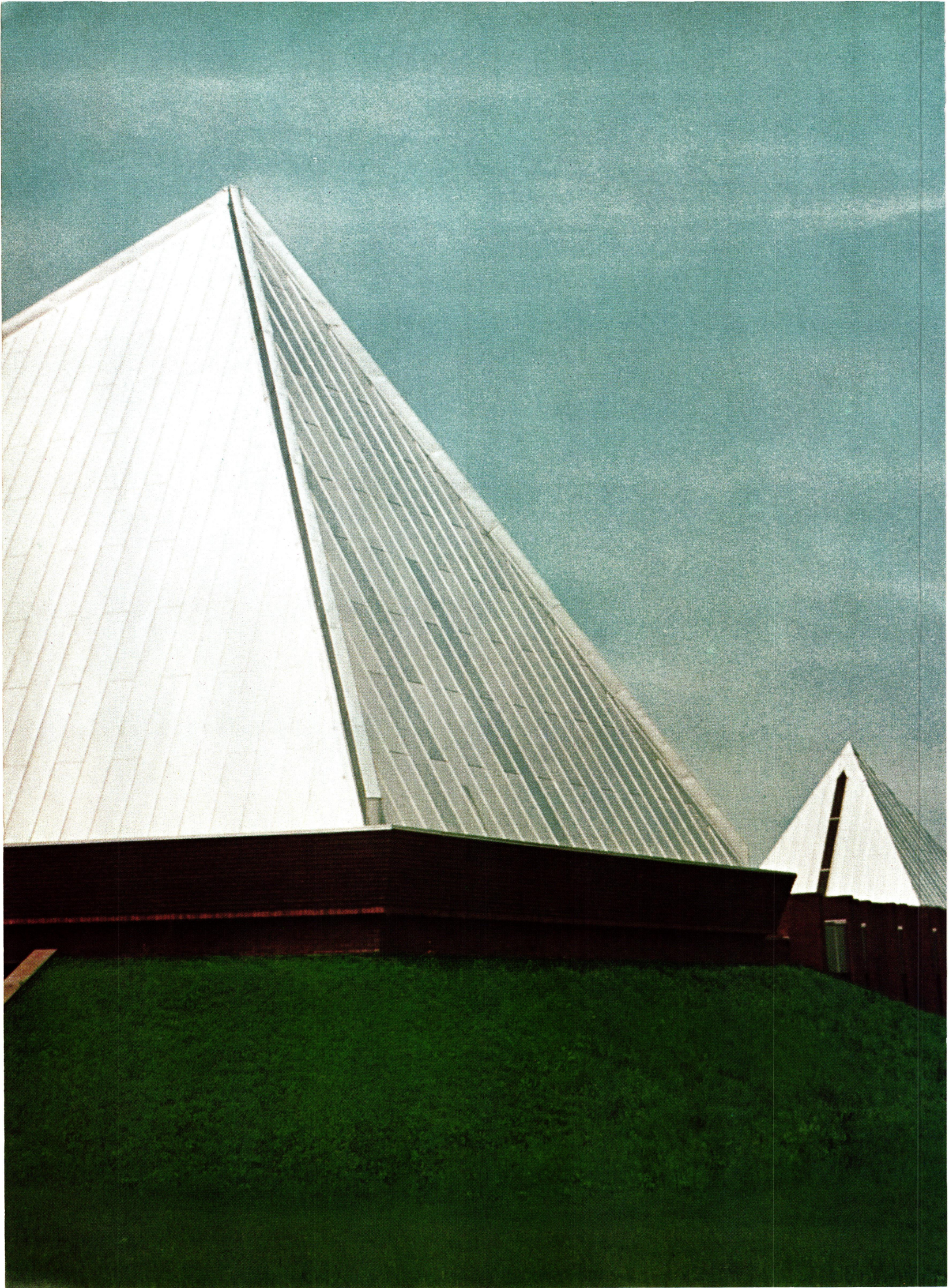


Stainless sanctuary puts it all together

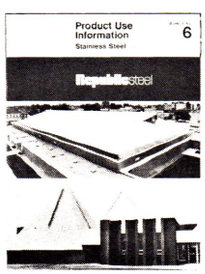
...roof and walls in one piece!

"Inspired" is the word for the design of the new Temple Adath Yeshurun, located in Syracuse, New York. Created by Percival Goodman, F.A.I.A., of New York, in association with Quinlivan, Pierik & Krause of Syracuse, the stainless steel roof of this unusual structure soars 72 feet to peak, to form both walls and roof.

A total of 18,000 pounds of DUROFLASH® "dead-soft" Type 304 stainless steel from Republic was used — 26-gage in a muted silver color. Esthetically appealing and pliable enough to form easily into a variety of shapes, DUROFLASH actually is stronger and tougher than comparable materials and can be joined by soldering, welding, nailing, or riveting.

Says architect Percival Goodman, "We sought a structure whose form would not only satisfy functional needs and meet a limited budget but would also be a landmark. An 'all roof' design was the answer, eliminating the need for costly masonry."

DUROFLASH stainless sheets were supplied to the sheet metal contractor in 12-foot lengths. Standing seams were constructed on job site, using an ingenious combination of automatic roll forming and automatic welding. The 24,000-square-foot covering was completed in less than 90 days by a 12-man crew.



Write for Product Use Information Bulletin No. 6 (Adv. 2271) for more details on this application of DUROFLASH stainless steel roofing and flashing . . . the material that lends itself to the unusual. Readily available from your Steel Service Center. Republic Steel Corporation, Cleveland OH 44101.

Republicsteel

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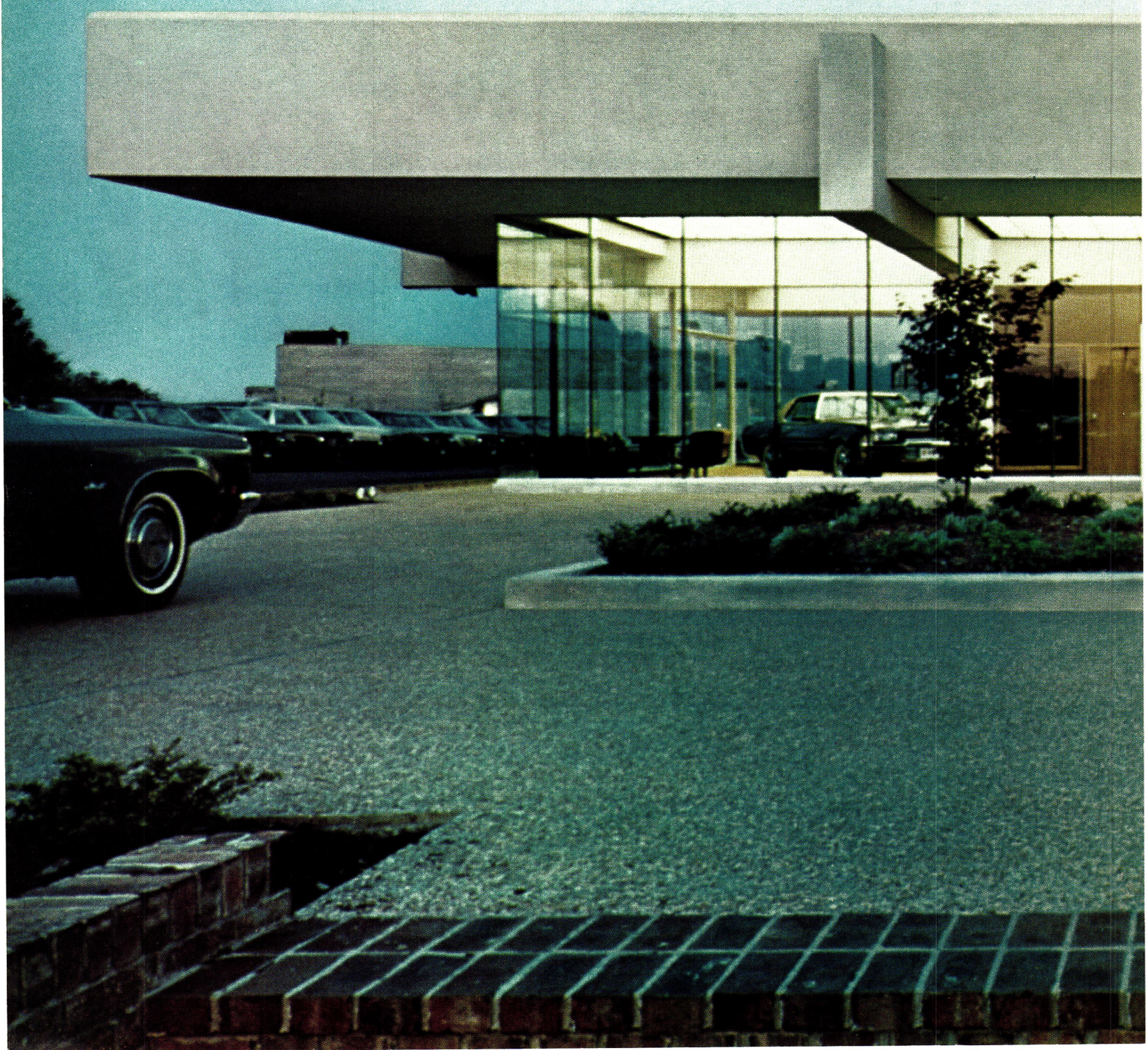
PPG's Total Vision System gives business a totally open look.

Joe King's automobile showroom in Spartanburg, South Carolina, is something like the hardtops he sells. The concrete roof of this glass cube is supported by a central core inside the showroom. So there are no support columns to mar vision through any part of the all-glass exterior. The building is simply a clearly beautiful auto showcase with a strong visual invitation to potential customers.

The architects chose PPG's Total Vision System (TVS) to achieve this totally open look. A TVS installation relies on three-quarter-inch-thick clear annealed float glass mullions as the major supporting element. No metal, wood, or masonry mullions are used.



The width and thickness of the large lights of clear float glass forming the vision areas are governed by glass and silicone design requirements at the design windload. Unobtrusive PPG Architectural Metals aluminum sections frame the system at head, jambs, and sill. When installed, these sections along with the black structural adhesive seem to disappear.

An infinite variety of designs and configurations may be achieved within the engineering parameters of TVS. We have successfully tested Total Visions Systems as high as 30 feet with windloads of 30 psf—nearly 100-mph wind velocity.

Total Vision Systems are available as a single-source construction package from PPG. Complete information on glass recommendations, installation techniques, glazing details, and other data on TVS is contained in the technical bulletin: *Total Vision Systems PDS t-1.* Contact your PPG Architectural Representative or write PPG Industries, Inc., Technical Services Department, One Gateway Center, Pittsburgh, Pa. 15222.

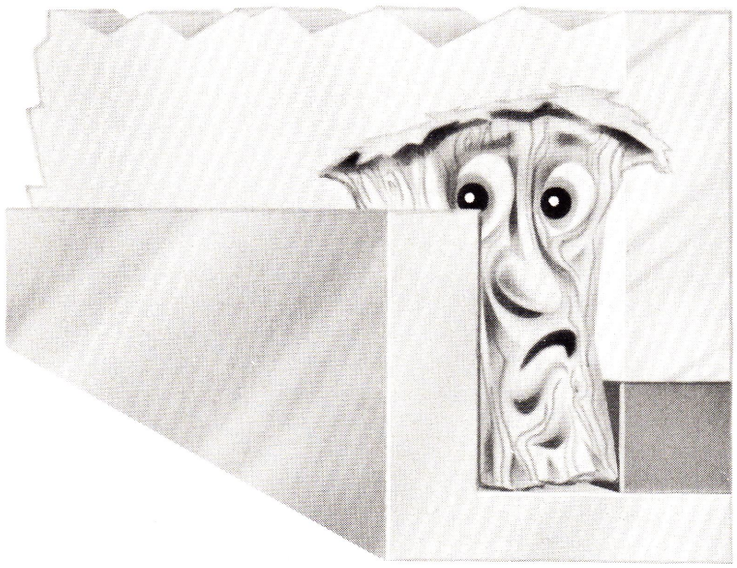
Owner: Joe King Oldsmobile, Spartanburg, S.C.
Architect: Lockwood Greene, Spartanburg, S.C.

For more data, circle 135 on inquiry card

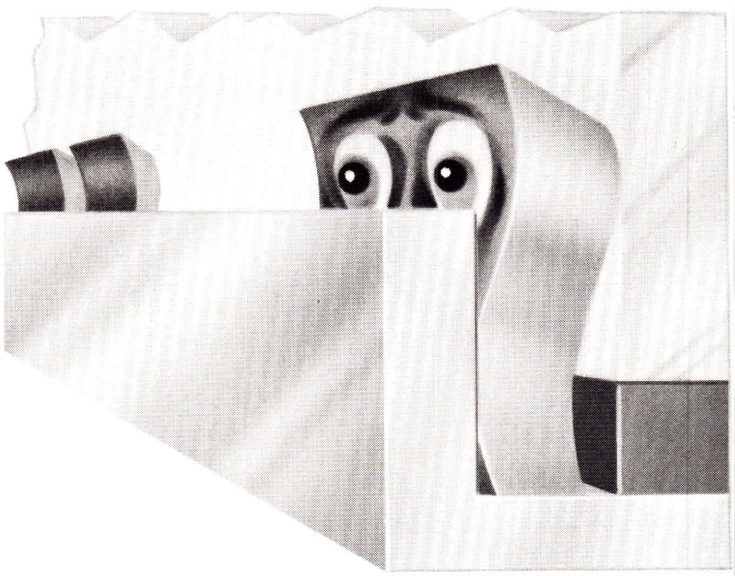
PPG: a Concern for the Future

PPG
INDUSTRIES

To avoid glazing problems caused by faulty shimming, avoid three of these shims.



The makeshift shim. It might do the job for a while.



The misplaced shim. It can't do the right job when it is in the wrong place.

All but the Pre-shimmed Tremco 440 Tape can cause problems that might crack or break glass, or cause sealant pump-out or failure.

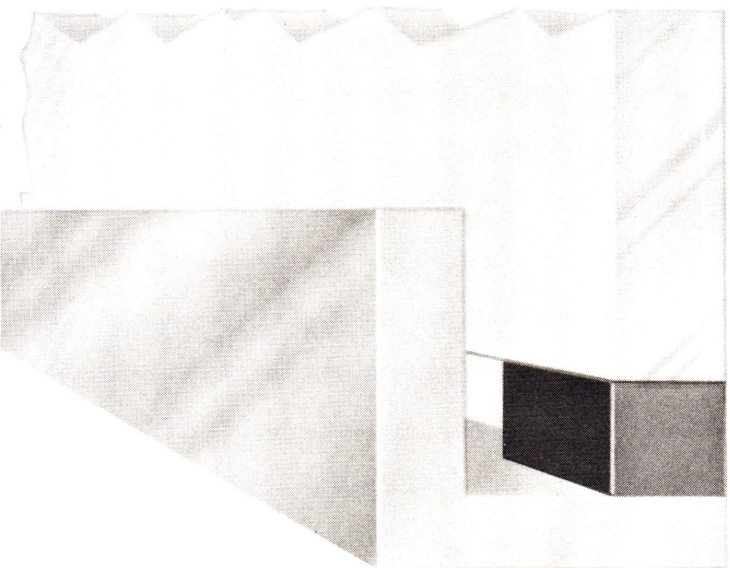
If a shim is unevenly spaced it creates pressure points which could cause glass breakage. A makeshift shim, like a splinter of wood or piece of floor tile, could cause sealant adhesive failure resulting from improper wind load transfer from glass to seal. And if there is no shim at all, the pumping action of the glass will soon squeeze out the sealant.

That's why you should specify Pre-shimmed Tremco 440 Tape. It's a highly adhesive, preformed, shrinkproof sealant with a built-in shim running through the center.

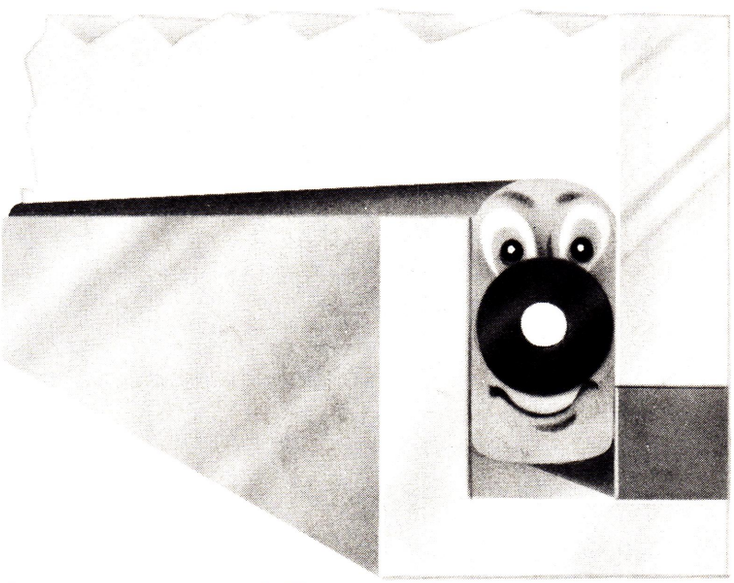
This shim — a continuous elastomeric rod reinforced by a fiberglass core — distributes loading stress uniformly around the perimeter of the frame.

So you don't get pressure points. Or sealant squeeze-out. Or adhesive or cohesive failure.

And with the trend to larger, heavier, more



The forgotten shim. Whoops. Someone forgot to put it in.



The Pre-shimmed Tremco Tape. It puts a continuous spacer-cushion all the way around the perimeter.

versatile glass, Tremco's ability to provide a leakproof glazing system from a variety of compatible components is more critical than ever.

For all the details on Pre-shimmed Tremco 440 Tape, see your Tremco man. In fact, your Tremco man has the answer to any sealant problem. Because for over 40 years now, solving sealant problems has been our primary business. In addition to our exclusive glazing systems, we have over 15 basic sealant formulations for construction joints . . . including such familiar names as MONO (our job-proven acrylic terpolymer), DYmeric (the Tremco-developed polymer), and Lasto-Meric (our polysulfide).

Contact your local Tremco representative, or write: The Tremco Manufacturing Company, Cleveland, Ohio 44104, Toronto 17, Ontario.

TREMCO
The water stoppers

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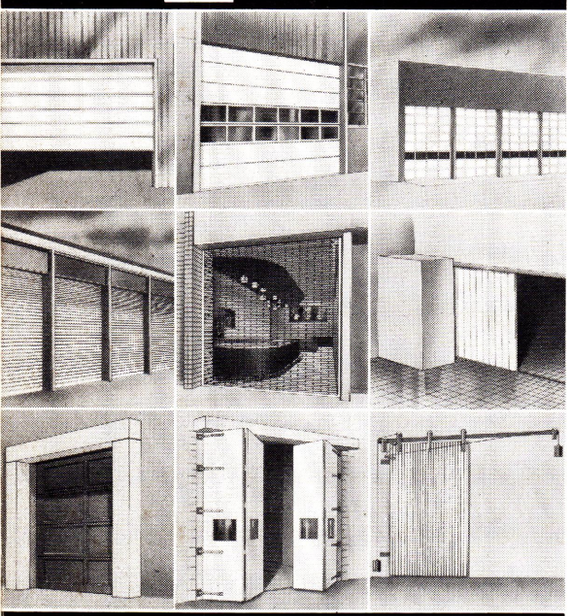
when it comes to filling an opening...

any opening



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FOR FULL DETAILS SEE YOUR SWEETS ARCHITECTURAL CATALOG FILE Section 8.9/Cra "Uprising Sectional Doors" and/or Section 8.7/Cr "Rolling Doors, Grilles, Shutters and Sliding Fire Doors."

Contact your local Crawford Distributor for specific data.

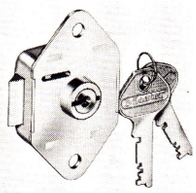
CRAWFORD

Crawford Door Company, 4270 High Street, Ecorse, Michigan 48229

Division of The Celotex Corp.

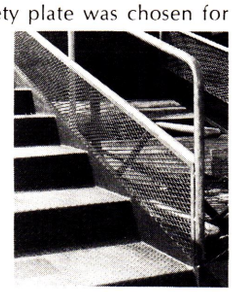
continued from page 206

LOCKER-CABINET LOCK / Recommended for lockers with handles and vertical locking rods, this product fits all standard locker piercings. Solid metal construction, solid locking bolt and rust-resistant working parts are featured with other design aspects minimizing unauthorized entry. Four-year guarantee. ■ Master Lock Co., Milwaukee, Wis.



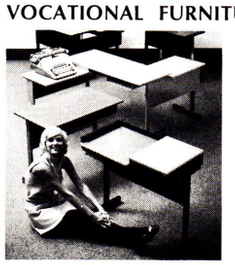
Circle 339 on inquiry card

STEEL BLEACHERS / Safety plate was chosen for its raised lug pattern, which is said to have excellent non-slip characteristics and traction, structural rigidity, and appearance. The company bought 3/16-in. gauge plate in various lengths and widths. The plates were brake-formed to form a stair type configuration. ■ Inland Steel Co., Chicago.



Circle 340 on inquiry card

VOCATIONAL FURNITURE / Typing, business machine, bookkeeping, and general office desks are available in a choice of styles, including straight desks, L-desks and Z-desks. Stain and scratch-resistant plastic tops are finished in walnut or tan birch. ■ Smith System Mfg., New Brighton, Minn.



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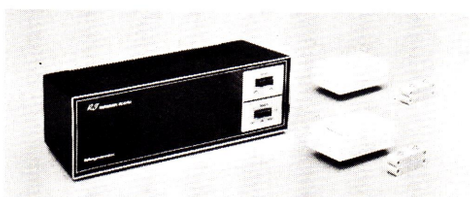

HOME SECURITY ALARM / Four basic alarms are offered to protect the principal home entrances, detect motion within the home, and warn of fire and smoke. All are moderately priced. ■ Magnavox Co., New York City.

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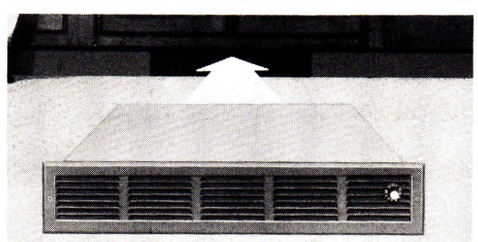

SPACEBOARD HEATER / An electric heater for toe-space recessing under kitchen and laundry cabinets combines safety features with installation ease. The heaters are factory-wired for 1,350 and 1,800 watts, with optional single- and double-pole thermostats available. A black grill is included. ■ Berko Electric Mfg. Corp., Michigan City, Ind.

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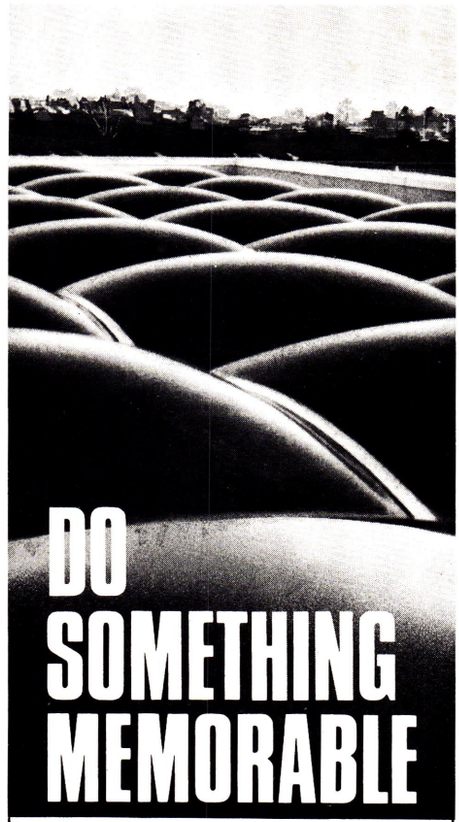

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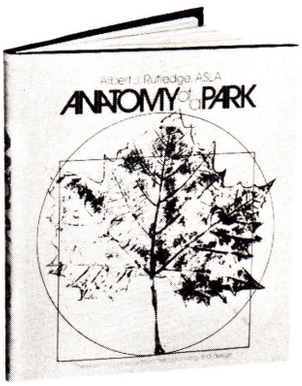

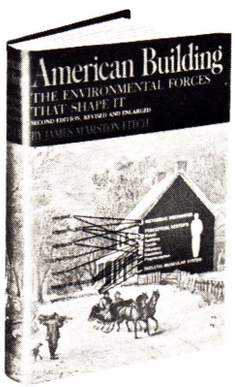

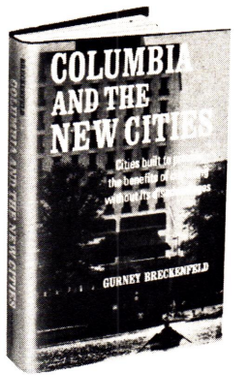

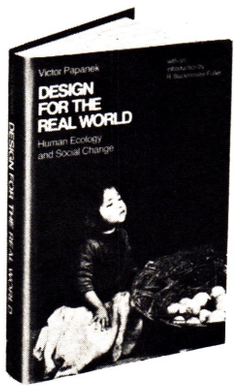

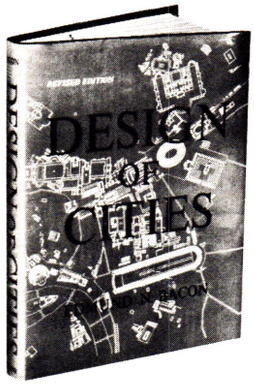

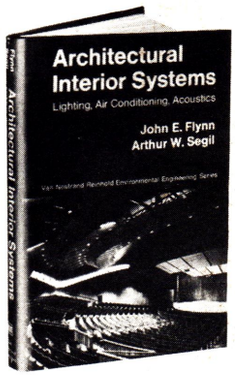

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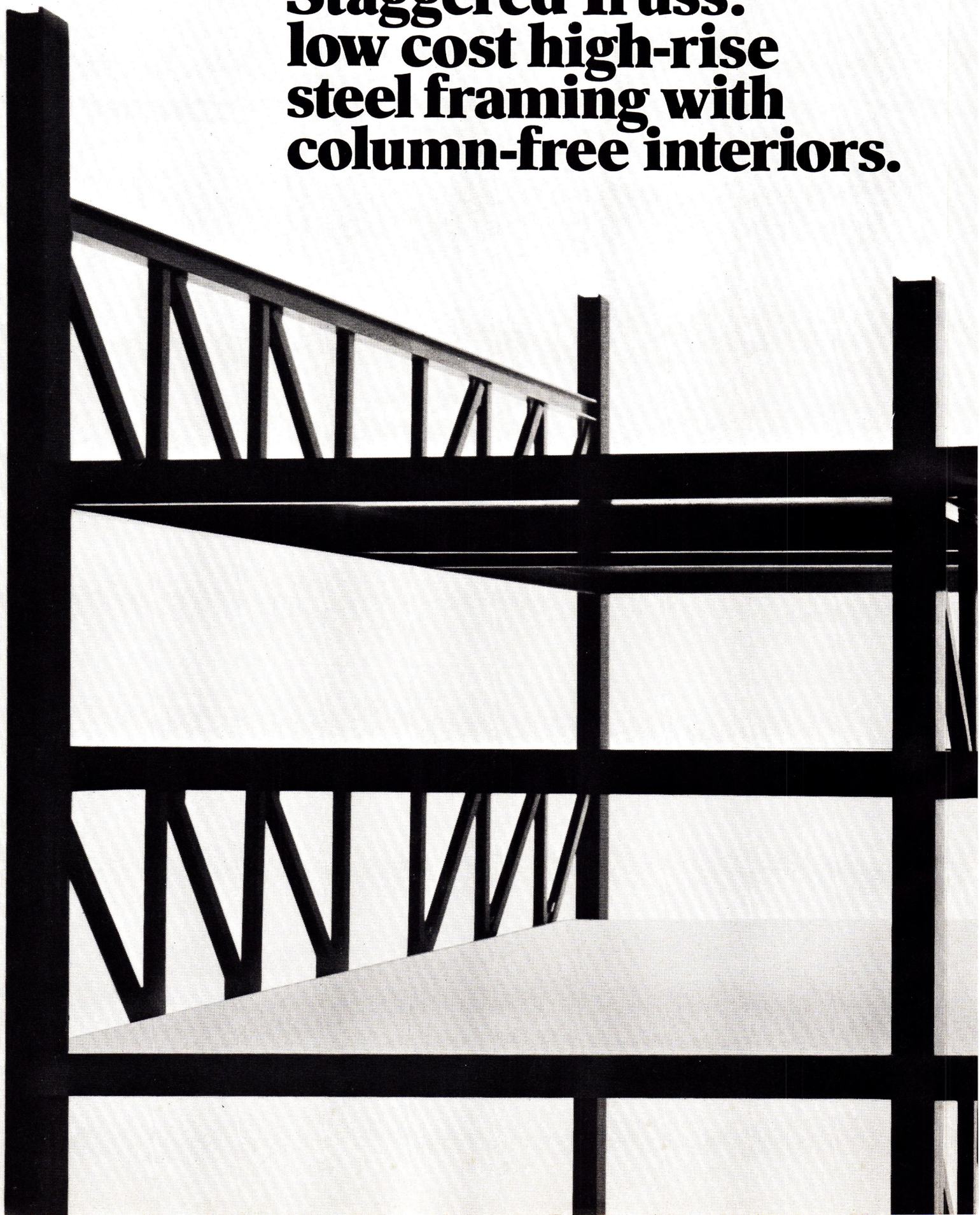
Staggered Truss: low cost high-rise steel framing with column-free interiors.



The new staggered truss framing system that has undercut concrete bids on a number of recent buildings (and which goes up faster to generate earlier rental income), also results in column-free interiors that permit almost unrestricted space utilization—including column-free parking space.

How the staggered truss works.

As the model shows, the staggered truss consists of story-high trusses that span transversely between exterior columns, and occur in a staggered pattern from floor to floor. The floor system acts as a diaphragm and transfers lateral loads in the short direction to the trusses. Lateral loads are thereby resisted by the truss diagonals and are transferred to direct loads in the columns. So the columns receive no significant bending moment in the transverse direction.

Design Flexibility

The staggered truss results in column-free interiors, providing almost unrestricted space utilization. Truss spacing can be varied to accommodate a number of unit sizes between them. The system can be used efficiently with a curvilinear plan, or in combination of offset rectangles—and it accommodates a wide variety of vertical stacking possibilities.

How the staggered truss trims costs.

First, the staggered truss requires surprisingly little steel. Second, it requires simpler and less costly foundations. Third, the staggered truss speeds construction, resulting in earlier rental income and lower cost construction loans.

Write for detailed information.

Our new 26-page book works out a typical 20-story apartment building in detail. For your copy, call the nearest U.S. Steel District Sales Office and ask for a Construction Representative, or write United States Steel, P.O. Box 86, Pittsburgh, Pa. 15230.

United States Steel USS TRADEMARK

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The now first choice

Let's look at the facts about acid waste systems!

A mixed system of polypropylene fittings and glass pipe is a poor third choice. Consider these facts about the GSR® FUSEAL® Flame Retardant Polypropylene system and the real "in service realities."

Expansion...Polypropylene systems don't get hot enough to expand. Actual in service realities preclude high temperature build up in the system. Pipe sizing and installation regulations prohibit large volumes of waste. Horizontal runs rarely if ever are more than one-third full. In risers or stacks the drainage falls free. Heat from exothermic reaction is local and dissipates rapidly. There is a circulation of air from vents throughout the entire system that has a significant cooling effect. The heat conductivity rate of polypropylene won't permit the system to get hot. Our competition would have you believe that a drainage system is a full non draining heated cauldron of boiling acid...Expansion is *not* a problem, we'll guarantee it, our trouble free history proves it.

Chemical Resistance...Chemical resistance data on plastics is derived from immersion of small test samples into reagents for extended periods. Data of this type cannot be used for evaluating drainage piping materials. Fuseal meets all practical requirements. In thousands of installations of every conceivable type, including chemical research labs with the severest usages, there has never been a single reported failure of a Fuseal system in our entire product history of many years.

Sag...Guaranteed not to sag under high temperatures. Test after test by nSf and other testing laboratories as well as on the job performance prove conclusively that Fuseal will not sag under any in service conditions. To say that it will is to refute our successful history and all testing.

Flame Spread...Fuseal polypropylene is flame retardant. Our system will not support combustion or contribute to flame spread within buildings. Fuseal polypropylene is classified self extinguishing Group I by ASTM test method D-635, UL subject 94, and also by Federal Aviation Regulation FAR 25.853.

Total Installed Cost 20% to 25% Lower...Fuseal offers the complete range of fittings. Four times more than mixed systems, and including 6" fittings. Labor cost of installation is lower because handling is easier, cutting is faster. Fuseal can be moved around the job easier and it lends itself to cost saving prefabrication. On job after job, Fuseal costs substantially less to install. Let your bidding prove it. There is no valid reason why owners should be deprived of the savings Fuseal offers.

The Most Tested System on the Market...Fuseal has been researched, tested and approved by every meaningful code jurisdiction and testing laboratory in the country. Many of the best known institutions have run their own tests prior to acceptance.

Remember the Most Important Fact: Polypropylene is the *now* material for acid waste drain systems. It does the job for less cost.

Write today for more information about Fuseal.

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1111 Central Florida Parkway, Orlando, Florida 32809 • Tel. (305) 851-6710

2165

For more data, circle 139 on inquiry card

OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry Card, pages 255-256

LOWERING MECHANISMS / Electrical lowering mechanisms for use with lighting fixtures weighing up to 125 lbs are described in an 8-page brochure. Thirteen drawings are used to illustrate mounting methods, internal construction, wiring and controls. ■ Pfaff & Kendall, Newark, N.J.

Circle 400 on inquiry card

ALUMINIZED STEEL ROOFING / Comparative properties and relative costs of four metal roofing materials are featured in a product data bulletin. ■ Armco Steel Corp., Middletown, O.

Circle 401 on inquiry card

LABORATORY DRAINLINE / An acid-waste drainline system designed for light-to-moderate corrosion service is described in a brochure on the product, *Polyglass*. The brochure includes cross-sectional drawings and dimensions for the complete line of piping, fittings, traps and couplings. ■ Corning Glass Works, Corning, N.Y.*

Circle 402 on inquiry card

FAUCET CATALOGS / A revision in the complete product literature area of the producer places all products into three separate catalogs. The general line of plumbing fittings is covered, as well as a full line of hospital fittings, food service models and laboratory fittings. ■ The Chicago Faucet Co., Des Plaines, Ill.

Circle 403 on inquiry card

FOOD SERVICE PRODUCTS / A 106-page catalog details a line of beverage and food service products designed to save bar and counter space. A wide variety of dispensers, carbonators, faucets and refrigeration units are covered. ■ Kenco Products Corp., Englewood, N.J.

Circle 404 on inquiry card

ELECTRIC UNIT HEATER / A bulletin contains complete technical information on units that range from 1½ kw to 36 kw, suitable for horizontal or vertical mounting. Totally enclosed motors and automatic thermostats are standard features. ■ ILG Industries Inc., Chicago, Ill.

Circle 405 on inquiry card

FILTER DUST COLLECTORS / An 8-page bulletin details specifications and operational schematics for fabric filter dust collectors with efficiencies up to 99.9 per cent. Units are prefabricated, panelized construction. ■ The Air Preheater Co., Inc., Wellsville, N.Y.

Circle 406 on inquiry card

TENNIS COURT SURFACING / A full-color brochure that pictures and describes *Decoralt* acrylic decorative systems for topping play areas is now available. The protective material also includes several colors. Application and specification data are included. ■ The Flintkote Co., East Rutherford, N.J.*

Circle 407 on inquiry card

CLOSED CIRCUIT TELEVISION / A bulletin covers solid-state security and surveillance closed circuit television equipment, with high resolution and picture fidelity. ■ General Electric Co., Lynchburg, Va.

Circle 408 on inquiry card

PANEL DOOR STANDARDS / A 12-page booklet is available, outlining revised standards governing styles, types, sizes, grades and designs of commercially-available Douglas fir, western hemlock and Sitka spruce stile-and-rail doors and louvered- window and door blinds. ■ Fir & Hemlock Door Association, Portland, Ore.

Circle 409 on inquiry card

CONDENSING UNITS / Split central air conditioning systems are described in a 4-page brochure available for home and apartment buildings and designers. The seven-model series is available in cooling capacities of 12,000 to 47,000 BTU/hr. ■ General Electric Co., Louisville, Ky.*

Circle 410 on inquiry card

ZONING, PARKING, TRAFFIC SURVEY / This 196-page work is based on a survey of over 200 cities across the nation. It discusses how zoning may serve traffic interests. ■ Eno Foundation, Saugatuck, Conn.

Circle 411 on inquiry card

STEAM BOILERS / Immersion-fired steam boilers that offer a high percentage of heating surface are described in a technical bulletin. ■ Sellers Engineering Co., Chicago, Ill.*

Circle 412 on inquiry card

HOME VENTILATION GUIDE / The guide also includes a product directory and guidelines for selection and installation of ducting and fans for kitchens, utility rooms and bathrooms. ■ Home Ventilating Institute, Chicago, Ill.

Circle 413 on inquiry card

more literature on page 245

* *Additional product information in Sweet's Architectural File*

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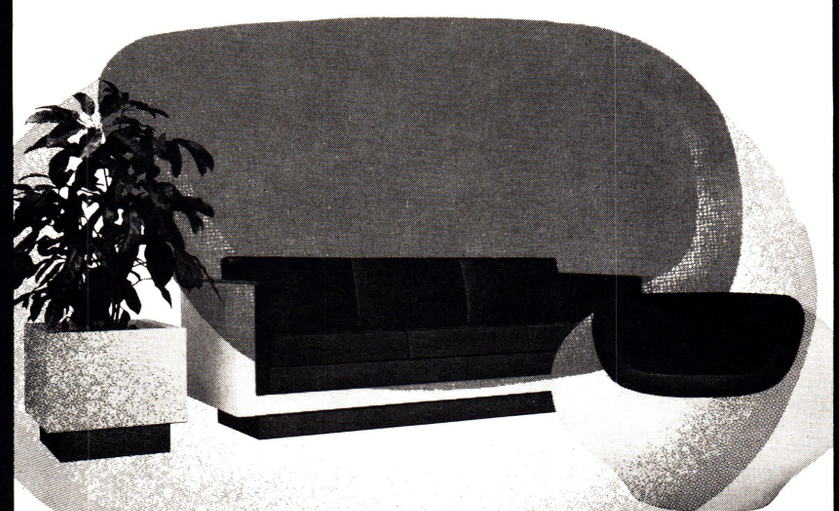

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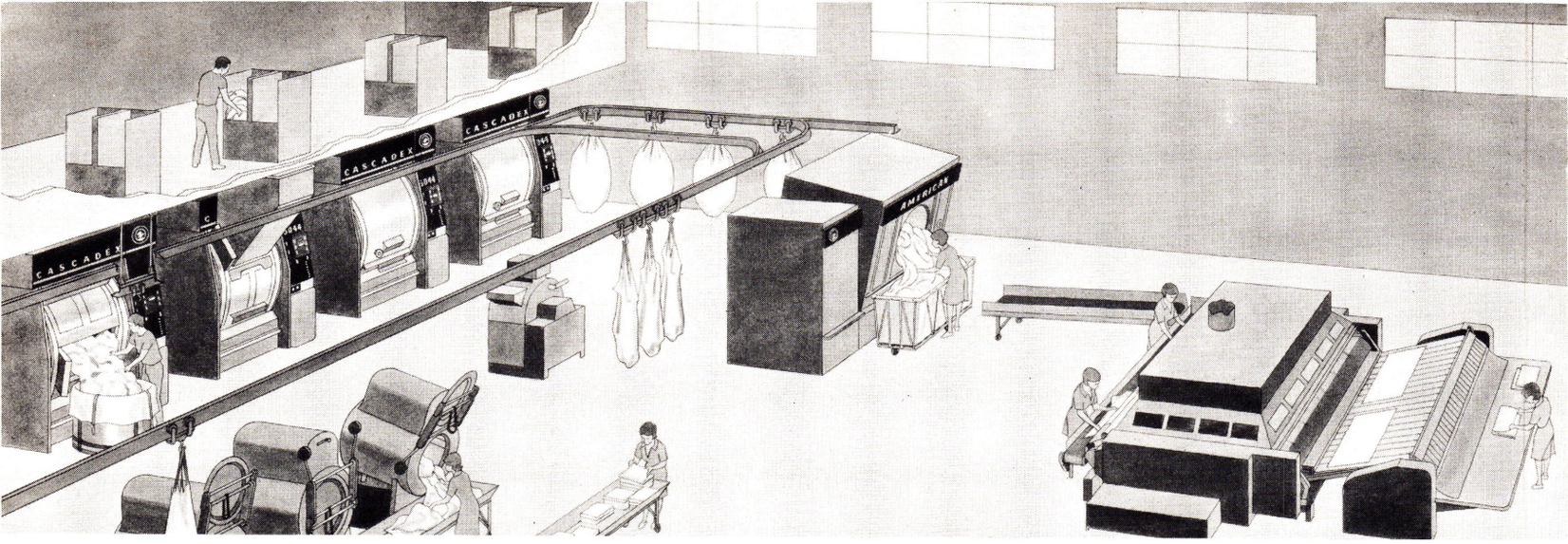

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Laundry needs—in terms of type of equipment and provision for flexibility—have changed dramatically. New synthetic fabrics and rising labor costs have called for new kinds of equipment, greater degrees of automation—and the adaptability of both to changes in the size and sort of work loads.

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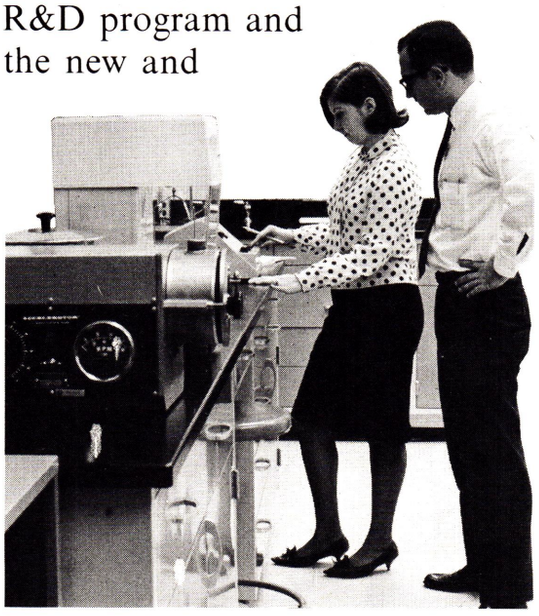

improved process machinery that it has produced—machinery that is now proving itself in the "new" laundry operations of today.

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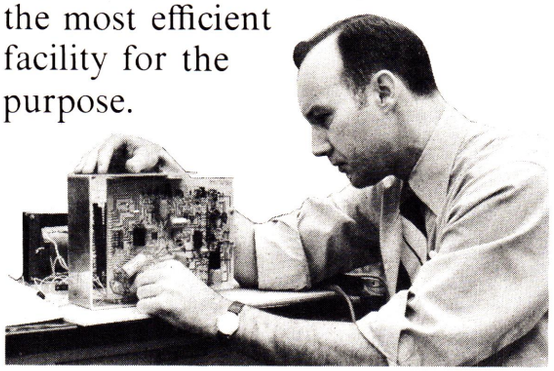
We can help you with complete floor plans, equipment recommendations, flow diagrams, capacity and personnel data—anything you need to provide the most efficient facility for the purpose.



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The Formatic Steam Finisher
The Formatic Wet System Finisher

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American Laundry Machinery Industries
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For more data, circle 141 on inquiry card

continued from page 243

TOILET COMPARTMENTS / An 8-page Toilet Compartment Catalog illustrates a broadened line of laminated plastic washroom components, including shower dressing compartments. Units are available in floor-anchored and overhead-braced styles. ▪ Bobrick Washroom Equipment, Inc., New York City.*

Circle 414 on inquiry card

AIR PRECONDITIONER / A 4-page bulletin gives complete information, including efficiency ratings, specifications and dimensions on the *Kathabar Twin-Cel* system for preconditioning and decontaminating outside air. System conserves energy. ▪ Midland-Ross Corp., New Brunswick, N.J.

Circle 415 on inquiry card

UNITIZED LIGHTING SYSTEM / The *Balla Hi* mercury vapor unitized lighting system is described in a 12-page brochure featuring charts on candlepower distribution, coefficients of utilization, flux values, reflectance and ballast data and a guide to selection of the correct systems for mercury vapor light users. ▪ The Spero Electric Corp., Cleveland, O.

Circle 416 on inquiry card

PLASTIC PROFILE EXTRUSIONS / Fourteen 2-page professional design guides are available, covering thermoplastic materials, extrusion techniques, building industry applications and professional guides to management, designers and engineers, and purchasing. ▪ Crane Plastics, Columbus, O.*

Circle 417 on inquiry card

SPRAY-ON URETHANE INSULATION / A technical bulletin announces a spray-foam system with a flame spread rating of less than 25. The company says its *Polylite* foam system is in the UL Class "A" category. ▪ Reichhold Chemicals, Inc., White Plains, N.Y.*

Circle 418 on inquiry card

SECURITY SYSTEM PLANNING / Specifications, current technical information on design and hardware are offered for architects, engineers and planners. ▪ Oak Security Inc., Madison, Wis.

Circle 419 on inquiry card

DRAFTING TABLES / A 2-page abridged catalog presents table designs, colors, board and reference surface sizes, floor requirements and drawer sizes for 57 models. ▪ The Huey Co., Chicago, Ill.

Circle 420 on inquiry card

TWO-WAY RADIO / An 8-page brochure is available on a line of fully-transistorized mobile radios for the most complex system requirements. ▪ General Electric Co., Lynchburg, Va.

Circle 421 on inquiry card

ENGINE-GENERATOR DIRECTORY / The Electrical Generating Systems Marketing Association has published its latest directory listing manufacures, key personnel and products in the engine, generator and engine-generator set field. ▪ EGSMA, Chicago, Ill.

Circle 422 on inquiry card

SLIDE BEARINGS / *Fluorogold* slide bearings which compensate for thermal expansion, seismic displacement and multi-directional movements in bridges, buildings and other large structures are described in an 8-page brochure. Detailed engineering information is included. ▪ The Fluorocarbon Co., Anaheim, Calif.*

Circle 423 on inquiry card

ELECTRICAL SERVICE CROSS INDEX / An 8-page cross reference lists corresponding catalog numbers for similar products offered by eight competing manufacturers. The listing includes circuit breakers, enclosures, loadcenters, metering equipment and safety switches. ▪ Zinsco Electrical Products, St. Louis, Mo.

Circle 424 on inquiry card

OSHA COMPLIANCE KIT / The kit consists of information about OSHA, pertaining to electrical wiring devices, including rules and regulations for all new installations and major modifications for all existing installations. Construction site standards are listed as well. ▪ Leviton Mfg. Co., Inc., Brooklyn, N.Y.

Circle 425 on inquiry card

LABORATORY WORK SURFACES / An 8-page, full-color catalog presents a full line of monolithic asbestos-cement work surfaces for educational, industrial and hospital laboratories. Physical properties, installation data and specifications are offered. ▪ Nicolet Industries, Inc., Ambler, Pa.

Circle 426 on inquiry card

more literature on page 254

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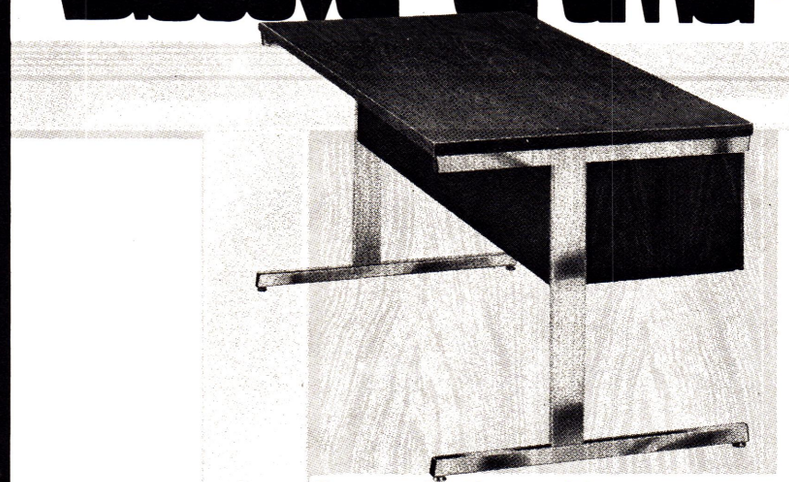

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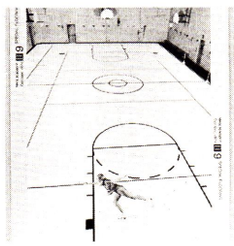
* *Additional product information in Sweet's Architectural File*

AE / UPDATE

A classified advertising section devoted to helping architects and engineers keep up to date on building product manufacturers.



SLICK MULTI-PURPOSE FLOORING adds a new dimension to sports and recreation programs. This unique thermoplastic surface can be used for "ice skating" when coated with a special conditioner. When conditioner is removed with ordinary maintenance equipment, the floor provides a firm footing for all regular activities. Precut colored game lines are available for basketball, volleyball, hockey, etc. Procedures for layout and installation are generally the same as those for resilient vinyl flooring. Color brochure in Sweet's Architectural File 9.24/Vi or from Vinyl Plastics, Inc., Sheboygan, Wis. 53081.

For more data, circle 143 on Inquiry Card

MASTERPIECES OF TEXTURED POETRY . . . Modern architecture cries out for the warmth and color of tapestry. The renaissance of the weaving art is today exemplified in the centuries-old ateliers of Aubusson, France, World Capital of Tapestry. Here traditional tapestries are still woven, but the emphasis is now on designs by top contemporary artists—Calder, Delaunay, Le Corbusier, etc. Tapestries can be custom-woven from your own artwork or designed to your specifications. Brochure available. Art Vivant, Inc., 173 Highridge Rd., New Rochelle, N.Y. 10804.

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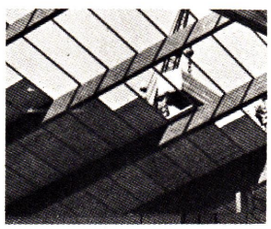

STRUCTURAL INSULATING ROOF DECK . . . PERMADECK combines structural strength with excellent thermal insulation to give a one component roof deck system that can be rapidly erected and roofed immediately with no drying time required. PERMADECK is installed dry and its insulation begins working at its rated values from the moment of insulation. "U" values as low as .13 available with no additional insulation. U.L. listed. Sweet's Architectural File 3.4/Con or mail card. Concrete Products, Inc., Box 130, Brunswick, Georgia 31520.

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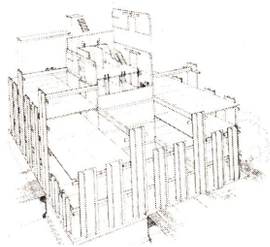

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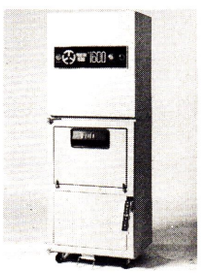

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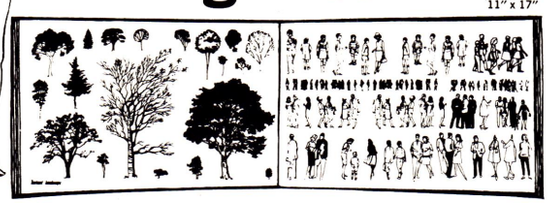

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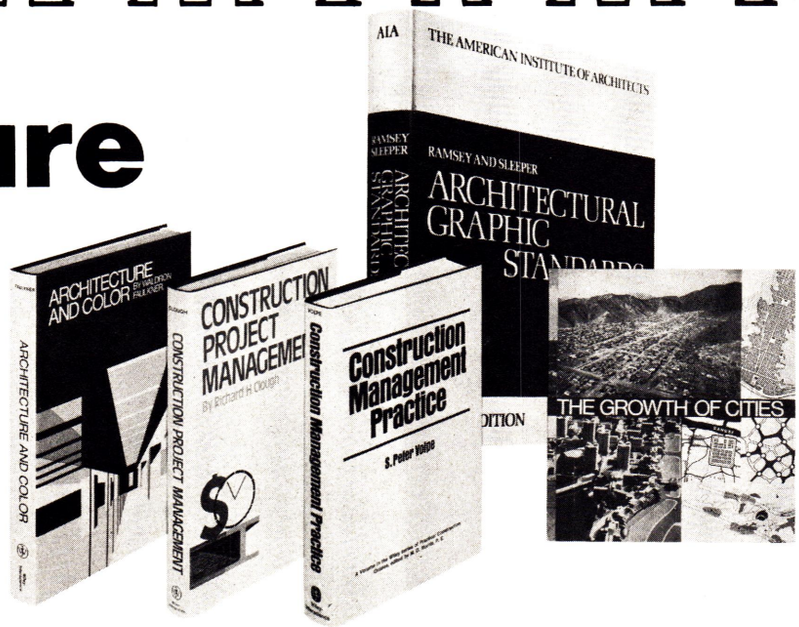

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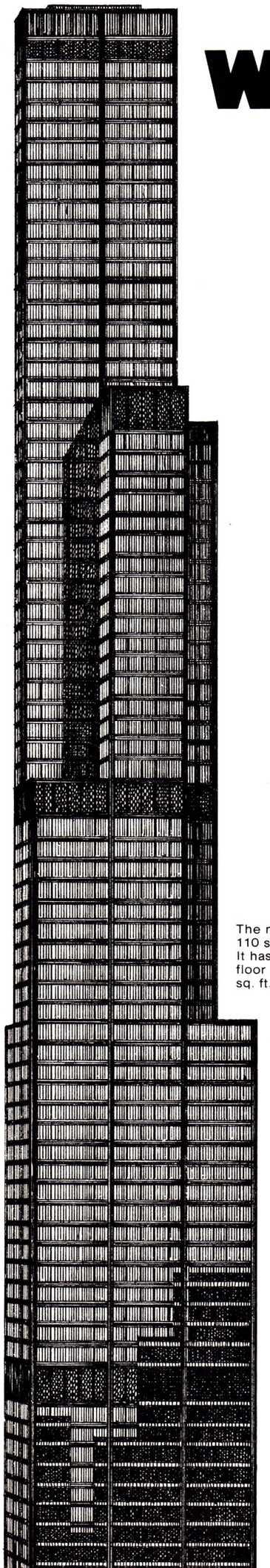

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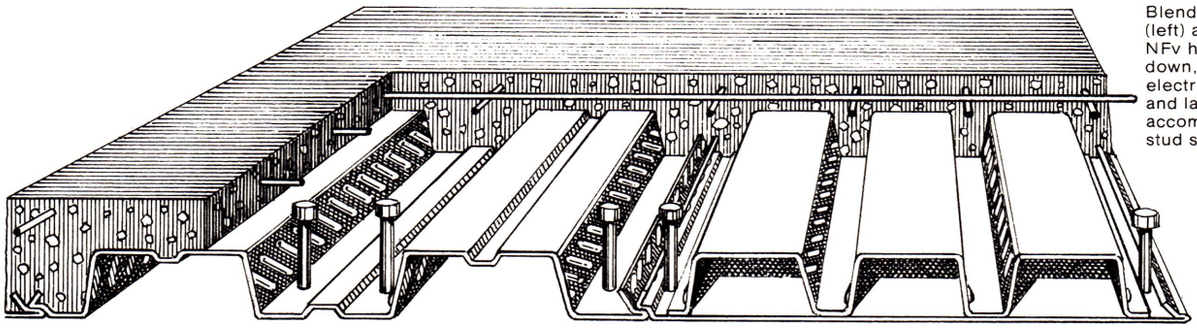

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